

# BACKFLOW PREVENTION CATALOG



**FIRE PROTECTION**



**WATERWORKS**



**IRRIGATION**



**PLUMBING**



**2013 - 2014**

**"Apollo" Valves**  
manufactured in the USA  
by CONBRACO Industries





# A history of Quality, Service and Innovation

Now in its ninth decade, Conbraco Industries, Inc. is a leading manufacturer of flow control products for U.S. and international markets. The company's headquarters is based in Matthews, North Carolina with manufacturing plants and foundries located in Pageland and Conway, South Carolina.

Conbraco has a history of new product development and innovation that dates back to the company's inception in 1928. Today, the Conbraco line of products is marketed under the "Apollo Valves" brand and includes: ball valves, butterfly valves, backflow prevention devices, water pressure reducing valves, mixing valves, safety relief valves, water gauges, strainers, actuation and APOLLOXPRESS® products.

Conbraco's vertically integrated manufacturing ensures a consistency of production, testing, quality and availability. You can be assured that Conbraco flow control products will deliver long term reliability. All manufacturing facilities are ISO 9001:2008 certified.

The Conbraco line continues to expand with new products, designs and advanced materials to better serve the needs of our customers. Markets served include: chemical processing, pulp and paper, petroleum, residential and commercial plumbing and heating, OEM, irrigation, water works, and fire protection.



**PAGELAND, SC**  
Bronze Foundry and Manufacturing Plant



**PAGELAND, SC**  
Final Assembly and Distribution Center



**CONWAY, SC**  
Steel Foundry and Manufacturing Plant



**MATTHEWS, NC**  
Corporate Headquarters



Throughout this catalog, products that are Lead Free\* or have a Lead Free\* option will be identified with these logos.



\* **LEAD FREE:** The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with CA AB1953, VT Act 193, MD HB372, LA HB471 and Federal Public Law 111-380. ANSI 3rd party approved and listed.

\*\* Any imported products are clearly identified as "Apollo International™".

Conbraco Industries offers a wide range of Apollo® products for potable and non-potable applications. When the use of lead free valves is required by code, specification or legislation, it is the sole responsibility of our customers to ensure that only lead free Apollo® products are installed in systems intended for potable water service. Further information related to our product offering and the federal Reduction of Lead In Drinking Water Act is available at [www.apollovalves.com/lead\\_free](http://www.apollovalves.com/lead_free), or by contacting Conbraco Customer Service.



# BACKFLOW APPLICATIONS



**WATERWORKS**  
RP 4AN Series



**FIRE PROTECTION**  
DCDA 4A Series



**PLUMBING**  
RP4A Series



**IRRIGATION**  
PVB 4A Series

**APOLLO PROVIDES YOUR BACKFLOW PREVENTION NEEDS**

# BACKFLOW PREVENTION CATALOG

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### Products

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|  | DC 4AnLF                  | 4AnLF-100                  | 2-1/2"-12"        | 12-13 |
|  | DC 4SGLF, DC 4S (10")     | 4SGLF-100, 4S-100          | 2-1/2"-10"        | 18-19 |
| Double Check Valve Detector Assembly       | DCDA 4ALF                 | 4ALF-600                   | 2-1/2"-12"        | 14-15 |
|  | DCDA 4AnLF                | 4AnLF-600                  | 2-1/2"-12"        | 16-17 |
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| Reduced Pressure Principle                 | RP 4A, 4ALF               | 4A-200, 4ALF-200           | 1/2"-2"           | 22-23 |
|  | RP 4AFHB                  | 4A-200FHB                  | 1"                | 25    |
|  | RP 40S (Stainless Steel)  | 40-200S (Stainless Steel)  | 1/4" - 1"         | 24    |
|  | RP 4ALF (LBF)             | 4ALF-200                   | 2-1/2"-12"        | 26-27 |
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| Reduced Pressure Detector Assembly         | RPDA 4ALF                 | 4ALF-700                   | 2-1/2"-12"        | 30-31 |
|  | RPDA 4AnLF                | 4AnLF-700                  | 2-1/2"-12"        | 32-33 |
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| Dual Check w/Atmospheric Port              | DCAP, DCAPLF              | 40-400, 40LF-400           | 1/2"-3/4"         | 38    |
| Dual Check Valve                           | DUC 4N, 4NLF              | 4N-300, 4NLF-300           | 3/8"-1-1/4"       | 39    |
|  | DUC 4FP                   | DUC4FP                     | 1"-1-1/4"         | 40    |
|  | DUC 40, 40LF              | 40-300, 40LF-300           | 1/2"-1"           | 41    |
| Carbonated Beverage Backflow Preventer     | CBBP                      | 4C-100                     | 1/4", 3/8"        | 42    |
| Hose Connection Vacuum Breaker             | HBV2                      | 38-300                     | 3/4"              | 43    |
| Anti-Freeze Hose Connection Vacuum Breaker | HBVAF2                    | 38-400                     | 3/4"              | 43    |
| Hose Connection Dual Check                 | HBDUC                     | 38-300                     | 3/4"              | 44    |
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| Freeze Protection Valve                    | FPV, FPVLF                | 40-000                     | 1/4"              | 45    |
| "Y" Strainers                              | YB, YBLF, YSCF            | 59/59LF & 125YF            | 1/4"-10"          | 46-47 |
| Thermal Expansion Valve                    | EXV, EXVLF                | 78-RV, RVLF                | 3/4"-1"           | 48    |
| Expansion Tanks for Potable Systems        | EXP                       | 40-XT                      |                   | 48    |
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| Test Kits                                  | TK                        | 40-200-TK                  | 3 Valve / 5 Valve | 49    |
| Test Kit Accessories                       | TKF                       | 40-000-TFK                 | 1/4"-3/4"         | 49    |
| Valve Setters                              | 4An                       | 4An-000                    | 2-1/2"-12"        | 50    |
| Backflow Shut-Off Valves                   |                           |                            |                   | 51    |
| Air Gap Drain                              | AGD                       | AGD 4A                     | 1/4"-12"          | 52    |

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# BACKFLOW PREVENTION CATALOG



## Selection Guide

| TYPE OF DEVICE                               | SERIES   | APPLICATION    |               |                     |                  |               | PAGE NO.                         |
|--|--|----------------|---------------|---------------------|------------------|---------------|----------------------------------|
|  |  | BACK SIPHONAGE | BACK PRESSURE | CONTINUOUS PRESSURE | AESTHETIC HAZARD | HEALTH HAZARD |                                  |
| DOUBLE CHECK VALVE                           | DC 4A, DC 4ALF<br>DC 4AnLF<br>DC 4S (10" only)<br>DC 4SG, 4SGLF        | ✓              | ✓             | ✓                   | ✓                |               | 9-11<br>12-13<br>18-19<br>18-19  |
| DOUBLE CHECK DETECTOR ASSEMBLY               | DCDA 4ALF<br>DCDA 4AnLF<br>DCDA 4SGLF, DCDA 4SG<br>DCDA- 4S (10" only) | ✓              | ✓             | ✓                   | ✓                |               | 14-15<br>16-17<br>20-21<br>20-21 |
| REDUCED PRESSURE PRINCIPLE                   | RP 4A, RP 4ALF   | ✓              | ✓             | ✓                   | ✓                | ✓             | 22-23<br>25-27                   |
| REDUCED PRESSURE PRINCIPLE (n & V Flow)      | RP 4AnLF   | ✓              | ✓             | ✓                   | ✓                | ✓             | 28-29                            |
| REDUCED PRESSURE PRINCIPLE (Stainless Steel) | RP 40-S  | ✓              | ✓             | ✓                   | ✓                | ✓             | 24                               |
| REDUCED PRESSURE DETECTOR ASSEMBLY           | RPDA 4ALF<br>RPDA 4AnLF  | ✓              | ✓             | ✓                   | ✓                | ✓             | 30-31<br>32-33                   |
| ATMOSPHERIC VACUUM BREAKER                   | AVB1, AVB1LF<br>AVB2   | ✓              |               |                     | ✓                | ✓             | 34-35                            |
| PRESSURE VACUUM BREAKER                      | PVB 4A   | ✓              |               | ✓                   | ✓                | ✓             | 36                               |
| SPILL RESISTANT PRESSURE VACUUM BREAKER      | SVB 4W, SVB 4WLF   | ✓              |               | ✓                   | ✓                | ✓             | 37                               |
| DUAL CHECK                                   | DUC 4N, DUC 4NLF<br>DUC 4FP<br>DUC40, DUC40LF                          | ✓              | ✓             | ✓                   | ✓                |               | 39<br>40<br>41                   |
| DUAL CHECK W/ ATMOS. PORT                    | DCAP   | ✓              | ✓             | ✓                   | ✓                |               | 38                               |
| CARBONATED BEVERAGE BACKFLOW PREVENTER       | CBBP   | ✓              | ✓             | ✓                   | ✓                |               | 42                               |
| HOSE CONNECTION VACUUM BREAKER               | HBV2   | ✓              | ✓ *           |                     | ✓                | ✓             | 43                               |
| ANTI FREEZE HOSE CONN. VACUUM BREAKER        | HBVAF2   | ✓              | ✓ *           |                     | ✓                | ✓             | 43                               |
| HOSE CONNECTION BACKFLOW PREVENTER           | HBDUC  | ✓              | ✓ *           |                     | ✓                | ✓             | 44                               |
| LAB FAUCET VACUUM BREAKER                    | LFDUC  | ✓              | ✓             |                     | ✓                |               | 44                               |

\* Limited back pressure to 10' head

\*\* Check with local authorities having jurisdiction

# BACKFLOW PREVENTION CATALOG

## How To Order

### Apollo Valve Backflow Preventers **Model Codes**

Example: **DCDA2 LF 4A OFBG GPM 4**

Backflow Device    Type Bypass    Lead Free    Series    Shutoff    Meter Type    Size

### Apollo Valve Backflow Preventers **Factory Codes**

Example: **4A LF 62A E4**

Backflow Device    Lead Free    Type Bypass    Size    Meter    Shut-off Valve Configuration

|  | MODEL CODES       | FACTORY CODES      |
|--|-------------------|--------------------|
| Backflow Device  | Series            |                    |
| Double Check Valve Assemblies (DC)   | DC 4A (LF)        | 4A 10X (4ALF)      |
|  | DC 4AnLF          | 4AnLF 10X          |
|  | DC 4SG, 4SGLF     | 4SG 10X, 4SGLF 10X |
| Double Check Detector Assemblies (DCDA)  | <b>DCDA 4A LF</b> | <b>4ALF 62X</b>    |
|  | DCDA 4AnLF        | 4AnLF 62X          |
|  | DCDA 4SG, 4SGLF   | 4SG 60X, 4SGLF 60X |
| Reduced Pressure Assemblies (RP)   | RP 4A (LF)        | 4A 20X (4ALF)      |
|  | RP 4AnLF          | 4AnLF 20X          |
| Reduced Pressure Detector Assemblies (RPDA)                                      | RPDA 4ALF         | 4ALF 72X           |
|  | RPDA 4AnLF        | 4AnLF 72X          |
| Options  |                   |                    |
| Std. "81" metal Bronze   | No Code           | No Code            |
| Lead Free Bronze   | LF                | LF                 |
| No Strainer (Standard 1/2" - 12")  | No Code           | No Code            |
| With Wye Strainer  | YS                | 1                  |
| Type - Detector Bypass Configuration Orientation determined by facing downstream |                   |                    |
| Type 2 - Standard & on Right Side (except 4SG on top)                            | <b>2</b>          | <b>2</b>           |
| Type 1 - On Right Side (Except 4SG - on top)                                     | 1                 | No Code            |
| Type 3 (Same as Type 1, Only on Left Side)                                       | 3                 | 3                  |
| Type 4 (Same as Type 2, Only on Left Side)                                       | 4                 | 4                  |
| Size   |                   |                    |
| 1/4'   | 14                | 1                  |
| 3/8"   | 38                | 2                  |
| 1/2"   | 12                | 3                  |
| 3/4"   | 34                | 4                  |
| 1"   | 1                 | 5                  |
| 1 1/4"   | 114               | 6                  |
| 1 1/2"   | 112               | 7                  |
| 2"   | 2                 | 8                  |
| 2 1/2"   | 212               | 9                  |
| 3"   | 3                 | 0                  |
| 4"   | <b>4</b>          | <b>A</b>           |
| 6"   | 6                 | C                  |
| 8"   | 8                 | E                  |
| 10"  | 10                | G                  |
| 12"  | 12IN              | H                  |
| Detector Assembly Meters   |                   |                    |
| Cubic feet Meter   | CFM               | C                  |
| Gallons Meter  | <b>GPM</b>        | <b>E</b>           |
| Less Meter   | LM                | G                  |
|  | MODEL CODES       | FACTORY CODES      |



# BACKFLOW PREVENTION CATALOG



## How To Order

| Assembly Shutoff Valve Options                     |              |          |
|--|--------------|----------|
| 1/2" - 2"  |              |          |
| Less Shutoffs                                      | LS           | T1       |
| Ball Valves FNPT                                   | Std. No Code | T2       |
| Union Ball Valves                                  | UBV          | T4       |
| Press Connection                                   | PR           | PR       |
| Push Connection                                    | P            | P        |
| 2 1/2" - 12"                                       |              |          |
| Less Shutoffs                                      | LS           | 1        |
| NRS FXF  | NF           | 2        |
| NRS FXG  | NFG          | 12       |
| NRS GXG  | NG           | 11       |
| OSY FXF  | OF           | 3        |
| OSY FXG  | OFG          | 7        |
| OSY GXG  | OG           | 8        |
| F OSY X Butterfly G                                | <b>OFBG</b>  | <b>4</b> |
| F OSY X Post Indicator F                           | OFPIF        | 6        |
| F OSY X Post Indicator G                           | OFPIG        | 5        |
| G Butterfly X Butterfly G                          | BG           | 9        |
| G Butterfly X Post Indicator F                     | BGPIF        | 15       |
| F Ball Valve X Ball Valve F                        | FBV          | 5        |
| F Post Indicator X Butterfly G                     | PIFBG        | 13       |
| F Post Indicator X Post Indicator F                | PIFPIF       | 14       |
| F Post Indicator X OSY G                           | PIFOG        | 17       |
| G OS&Y x Post Indicator G                          | OGPIG        | 18       |
| G Butterfly x Post Indicator G                     | BVGPIG       | 19       |
| F Post Indicator x OS&Y F                          | PIFOF        | 20       |
| Testcock Options                                   |              |          |
| 1/8" SAE Flare (Standard 1/2" - 1" Assemblies)     | F            | F        |
| 1/4" FNPT (Standard 1 1/4" - 2" Assemblies)        | No Code      | No Code  |
| 1/2" FNPT (Standard 2 1/2" - 4" Assemblies)        | No Code      | No Code  |
| 3/4" FNPT (Standard 6" - 12" Assemblies)           | No Code      | No Code  |
| Shutoff Valve Handle Options                       |              |          |
| "T" Handles (Standard on 1/2" - 1" Assemblies)     | No Code      | No Code  |
| Locking "T" Handles (3/4" - 1")                    | LT           | LT       |
| Level Handles (Standard on 1 1/4" - 2" Assemblies) | No Code      | No Code  |
| Locking Lever Handles (1-1/4" - 2")                | LL           | LL       |
| Dual Check, DCAP Options – Inlet, Outlet Options   |              |          |
| FNPT   | F            | A        |
| MNPT   | M            | B        |
| Solder   | S            | H        |
| F Meter Threads                                    | FMR          | C        |
| M Meter Threads                                    | MMR          | E        |
| F Swivel Meter Threads                             | FSMTR        | S        |
| F BSPP   | FBSP         | F        |
| Chrome Plating Options (Selected Models)           |              |          |
| Rough Chrome                                       | RC           | 03       |
| Satin Chrome                                       | SC           | CS       |
| Polished Chrome                                    | PC           | 06       |

# BACKFLOW PREVENTION CATALOG

## Apollo Testable Backflow Preventors Cross Reference

| Double Check Assemblies            |   |                                |  |                               |  |              |
|------------------------------------|---|--------------------------------|--|-------------------------------|--|--------------|
| Size                               | Apollo Model#                               | Apollo Factory Code            | Watts                                    | Ames                          | Wilkins                                      | Febco        |
| 1/2" - 2"                          | DC 4A,<br>DC 4ALF                           | 4A 10X,<br>4ALF 10X            | 007, 719, LF 007, LF 719                 | 200B, 2000B                   | 950XL, 950XL2, 950XLT,<br>950XL2, 350, 350XL | 850          |
| 2-1/2" - 12"                       | DC 4ALF<br>4SG (2 1/2"-8"),<br>4S (10")     | 4ALF 10X<br>4SG 10X,<br>4S 10E | 007, 709, 774, 757, LF 007,<br>LF 709    | C200, M200,<br>2000SS, 2000CI | 350, 350A, 350AST                            | 850          |
|                                    | DC 4AnLF                                    | 4An 10X,<br>4AnLF 10X          |  |                               | 450  | 876          |
| Double Check Detector Assemblies   |   |                                |  |                               |  |              |
| Size                               | Apollo Model#                               | Apollo Factory Code            | Watts                                    | Ames                          | Wilkins                                      | Febco        |
| 2-1/2" - 12"                       | DCDA 4SG, 4SGLF<br>DCDA 4ALF, DCDA 4S (10") | 4SG 60X, LF<br>4ALF 62X        | 007DCDA, 709DCDA,<br>774DCDA, 757DCDA    | C300, M300,<br>3000CI, 3000SS | 350DA, 350ADA,<br>350ASTDA                   | 856          |
|                                    | DCDA 4AnLF                                  | 4AnLF 62X                      |  |                               | 450DA  | 876          |
| Reduced Pressure Assembly          |   |                                |  |                               |  |              |
| Size                               | Apollo Model#                               | Apollo Factory Code            | Watts                                    | Ames                          | Wilkins                                      | Febco        |
| 1/2" - 2"                          | RP 4A,<br>RPLF 4A                           | 4A 20X,<br>4ALF 20X            | 009, 909, 919, LF 009, LF 909,<br>LF 919 | 400B,<br>4000B                | 975XL, 975XL2,<br>375, 375XL                 | 825Y,<br>860 |
| 2-1/2" - 12"                       | RPLF 4A                                     | 4ALF 20X                       | 009, 909, 957, 994, LF 009,<br>LF 909    | C400, M400, 4000CI,<br>4000SS | 375, 375A, 375AST                            | 860          |
|                                    | RPLF 4An                                    | 4An 20X,<br>4AnLF 20X          |  |                               | 475  | 880          |
| Reduced Pressure Detector Assembly |   |                                |  |                               |  |              |
| Size                               | Apollo Model#                               | Apollo Factory Code            | Watts                                    | Ames                          | Wilkins                                      | Febco        |
| 2-1/2" - 12"                       | RPDA 4ALF                                   | 4A 72X,<br>4ALF 72X,<br>40 70X | 909RPDA,<br>957RPDA                      | C500, M500, 5000CI,<br>5000SS | 375DA, 375ADA,<br>375ASTDA                   | 826YD        |
|                                    | RPDA 4AnLF                                  | 4An 72X,<br>4AnLF 72X          |  |                               | 475DA  |              |
| Pressure Vacuum Breaker            |   |                                |  |                               |  |              |
| Size                               | Apollo Model#                               | Apollo Factory Code            | Watts                                    | Ames                          | Wilkins                                      | Febco        |
| 1/2" - 2"                          | PVB 4A                                      | 4A 50X                         | 800M4QT                                  |                               | 420, 720A                                    | 765, 765FR   |
| 3/4" - 1"                          | PVB 4ALF                                    | 4ALF 50X                       | LF008M4FR, LF008M4QT                     |                               | 420XL, 720AXL                                | 765, 765FR   |
| Spill Resistant Vacuum Breaker     |   |                                |  |                               |  |              |
| Size                               | Apollo Model#                               | Apollo Factory Code            | Watts                                    | Ames                          | Wilkins                                      | Febco        |
| 1/2" - 3/4"                        | SVB 4W,<br>SVBLF 4W (1/4"-1/2")             | 4W 50X,<br>4WLF 50X            | 008PCQT,<br>LF008PCQT                    |                               | 460  |              |



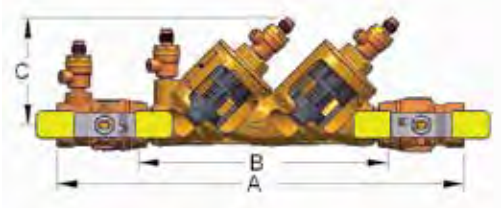
# BACKFLOW PREVENTION CATALOG

## Double Check Valve Backflow Preventers

### DC 4A SERIES



Sizes 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"



### TOP ENTRY DOUBLE CHECK VALVE ASSEMBLY

The Apollo MODEL DC 4A Double Check Valves are designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The modular check valve captured spring cartridges have replaceable seats and reversible silicone seat discs. Apollo ball valve shut-offs with stainless steel handles and nuts are standard.

#### OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. Each check valve is designed to maintain a minimum of 1 psi across the valve during normal operation. Should the downstream pressure increase to within 1 psi of supply pressure, both check valves will close to prevent a backflow condition.

#### FEATURES

- Low pressure loss
- Captured spring cartridge check valves
- Compact yet easy to maintain
- Apollo ball valves w/ SS handles & nuts standard
- Top access for fast testing and maintenance
- Threaded testcock protectors
- Corrosion resistant
- No special tools required
- 5 year, domestic warranty
- **Lead-Free** option
- USC FCCCHR
- AWWA C510
- UL, ULC Classified (less shutoffs)
- ASSE 1015
- IAPMO
- CSA
- Chloramine-resistant elastomers
- Patent pending
- Horizontal and vertical up approvals
- Maximum working pressure 175 psi
- Temperature range 33°F - 180°F
- Designed, manufactured, assembled and tested in South Carolina, USA

\* Contact factory for approval details

### MATERIALS

| Part               | Material                      |
|--------------------|-------------------------------|
| Body, Caps         | Bronze C84400/LF C89836       |
| Check Valves       | Glass-Filled PPO              |
| Springs            | 300 Series Stainless Steel    |
| Seat Discs         | Chloramine-Resistant Silicone |
| O-rings            | Chloramine-Resistant EPDM     |
| Ball Valve Handles | Stainless Steel               |

### FACTORY CODE

| 4A [X]                            | 1 X   | X  | T X   | X  |
|-----------------------------------|---|--|---|--|
|                                   | Y-strainer  | SIZE   | SHUT-OFF VALVES   | OPTIONS (CAN BE COMBINED)  |
| 4A = Standard<br>4ALF = Lead Free | 0 = Standard<br>1 = w/Y-strainer<br>(shipped loose) | 3 = 1/2"<br>4 = 3/4"<br>5 = 1"<br>6 = 1-1/4"<br>7 = 1-1/2"<br>8 = 2" | 1 = less ball valves (UL classified 3/4"-2")<br>2 = w/ball valves (Standard)<br>4 = w/union ball valves | F = SAE threaded test cocks (standard 1/2" 3/4", 1")<br>LL = locking lever handles (1-1/4", 1-1/2", 2")*<br>LT = Locking tee handles (3/4" -1")<br>PR = Press<br>P = Push (3/4" -1") |

Example:

**4A 104 T4LT** = 3/4" double check valve assembly with union ball valves with locking tee handles

### DIMENSIONS

See Page 55 For Flow Curves

| Model No.<br>Factory No.<br>Size | 4A 103 T2F<br>DC 4A 12<br>1/2" | 4A 103 T2F<br>DC 4A 12<br>15 mm. | 4A 104 T2F<br>DC 4A 34<br>3/4" | 4A 104 T2F<br>DC 4A 34<br>20 mm. | 4A 105 T2 F<br>DC 4A 1<br>1" | 4A 105 T2 F<br>DC 4A 1<br>25mm. | 4A 106 T2<br>DC 4A 114<br>1-1/4" | 4A 106 T2<br>DC 4A 114<br>32 mm. | 4A 107 T2<br>DC 4A 112<br>1-1/2" | 4A 107 T2<br>DC 4A 112<br>40 mm. | 4A 108 T2<br>DC 4A 2<br>2" | 4A 108 T2<br>DC 4A 2<br>50 mm. |
|----------------------------------|--------------------------------|----------------------------------|--------------------------------|----------------------------------|------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------|--------------------------------|
| A*                               | 11-1/8                         | 283                              | 12-3/4                         | 324                              | 14-5/8                       | 341                             | 18-5/8                           | 473                              | 18-3/4                           | 476                              | 21-1/8                     | 537                            |
| B                                | 7-3/8                          | 187                              | 8-1/2                          | 215                              | 9-1/2                        | 241                             | 11-3/4                           | 298                              | 11-5/8                           | 295                              | 12-3/4                     | 324                            |
| C                                | 3-1/4                          | 83                               | 3-1/2                          | 89                               | 4                            | 100                             | 4-1/2                            | 114                              | 4-1/2                            | 114                              | 5                          | 127                            |
| D                                | 2-1/2                          | 64                               | 3                              | 76                               | 3-1/4                        | 83                              | 4-3/4                            | 121                              | 4-3/4                            | 121                              | 5-3/8                      | 136                            |
| <b>WEIGHTS</b>                   | <b>lbs.</b>                    | <b>kg.</b>                       | <b>lbs.</b>                    | <b>kg.</b>                       | <b>lbs.</b>                  | <b>kg.</b>                      | <b>lbs.</b>                      | <b>kg.</b>                       | <b>lbs.</b>                      | <b>kg.</b>                       | <b>lbs.</b>                | <b>kg.</b>                     |
| Net Wt.                          | 4.4                            | 2.0                              | 6.0                            | 2.7                              | 10                           | 4.5                             | 14                               | 6.4                              | 17                               | 7.7                              | 25.4                       | 11.5                           |

\* For Union Ball Valve, Press, and Push connection dimensions, see submittal sheets.



For additional information, submittal sheets and manuals, visit [www.apollovalves.com](http://www.apollovalves.com)

Customer Service (704) 841-6000

# BACKFLOW PREVENTION CATALOG

## Double Check Valve Backflow Preventers

### DC 4ALF SERIES



Sizes 2-1/2"-12"



TriForce™ Check

### DOUBLE CHECK VALVE ASSEMBLY

The Apollo® MODEL DC 4ALF Double Check Valves are designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The TriForce™ center stem guided check valves feature replaceable and reversible silicone seat discs. The body is domestic stainless steel from 2-1/2"-8" and FDA epoxy coated ductile iron in the 10" and 12". Available with a wide variety of shutoff valve options.

#### OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. Each check valve is designed to maintain a minimum of 1 psi across the valve during normal operation. Should the downstream pressure increase to within 1 psi of supply pressure, both check valves will close to prevent a backflow condition.

#### FEATURES

- Domestic Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance - no special tools required
- Snap-in check retainers: 2-1/2"-6"
- Bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCCC&HR backflow preventer approval agencies
- Center stem guided TriForce™ check valves
- Approved for horizontal and vertical up flow
- Chloramine-resistant elastomers
- **Lead-Free** standard
- USC FCC & HR\*
- ASSE 1015
- CSA B64.5
- AWWA C-510\*
- IAPMO
- UL, ULC Classified
- FM approved
- Maximum working pressure 175 psi
- Temperature range 33°F - 140°F, 180°F intermittent
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Made in the USA
- 5 year, domestic warranty

\* Contact factory for approval details

### MATERIALS

| Part               | Material                      |
|--------------------|-------------------------------|
| Body (2-1/2"-8")   | 304 Stainless Steel           |
| Body (10 & 12")    | FDA Epoxy Coated Ductile Iron |
| Covers (2-1/2"-6") | Glass Filled PPO/SS           |
| Covers (8")        | 304 Stainless Steel           |
| Covers(10 & 12")   | FDA Epoxy Coated Ductile Iron |
| Check Valves       | Bronze/Glass-filled PPO/SS    |
| Springs            | Stainless Steel               |
| Seat Discs         | Chloramine-resistant Silicone |

### FACTORY CODE

| 4ALF                      | 1 X  | X  | OX [X]   |
|---------------------------|--|--|--|
|                           | Y-STRAINER                                       | SIZE   | SHUT-OFF VALVES  |
| 4ALF = Lead Free Standard | 0 = Standard<br>1 = w/Y-strainer (shipped loose) | 9 = 2-1/2"<br>0 = 3"<br>A = 4"<br>C = 6"<br>E = 8"<br>G = 10"<br>H = 12" | 1 = Less Shut-off Valves<br>2 = NRS Flg x NRS Flg<br>3 = OS&Y Flg x OS&Y Flg<br>4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv†<br>6 = OS&Y Flg x Post indicator Flg**<br>7 = OS&Y Flg x OS&Y Grv<br>8 = OS&Y Grv x OS&Y Grv<br>9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv†<br>10 = OS&Y Flg x Post Indicator Grv**<br>11 = NRS Grv x NRS Grv<br>12 = NRS Flg x NRS Grv<br>13 = Post Indicator Flg x Mon. Butterfly Vlv Grv†<br>14 = Post Indicator Flg x Post Indicator Flg<br>16 = Mon Butterfly Vlv Grv x Post Indicator Flg†<br>17 = Post Indicator Flg x OS&Y Grv<br>18 = OS&Y Grv x Post Indicator Grv<br>19 = Mon. Butterfly Vlv Grv x Post Indicator Grv<br>20 = Post Indicator Flg x OS&Y Flg<br>** Post indicator with plate & nut option not available in 2-1/2" size.<br>† Butterfly valves not available in 12" size. |

Example:

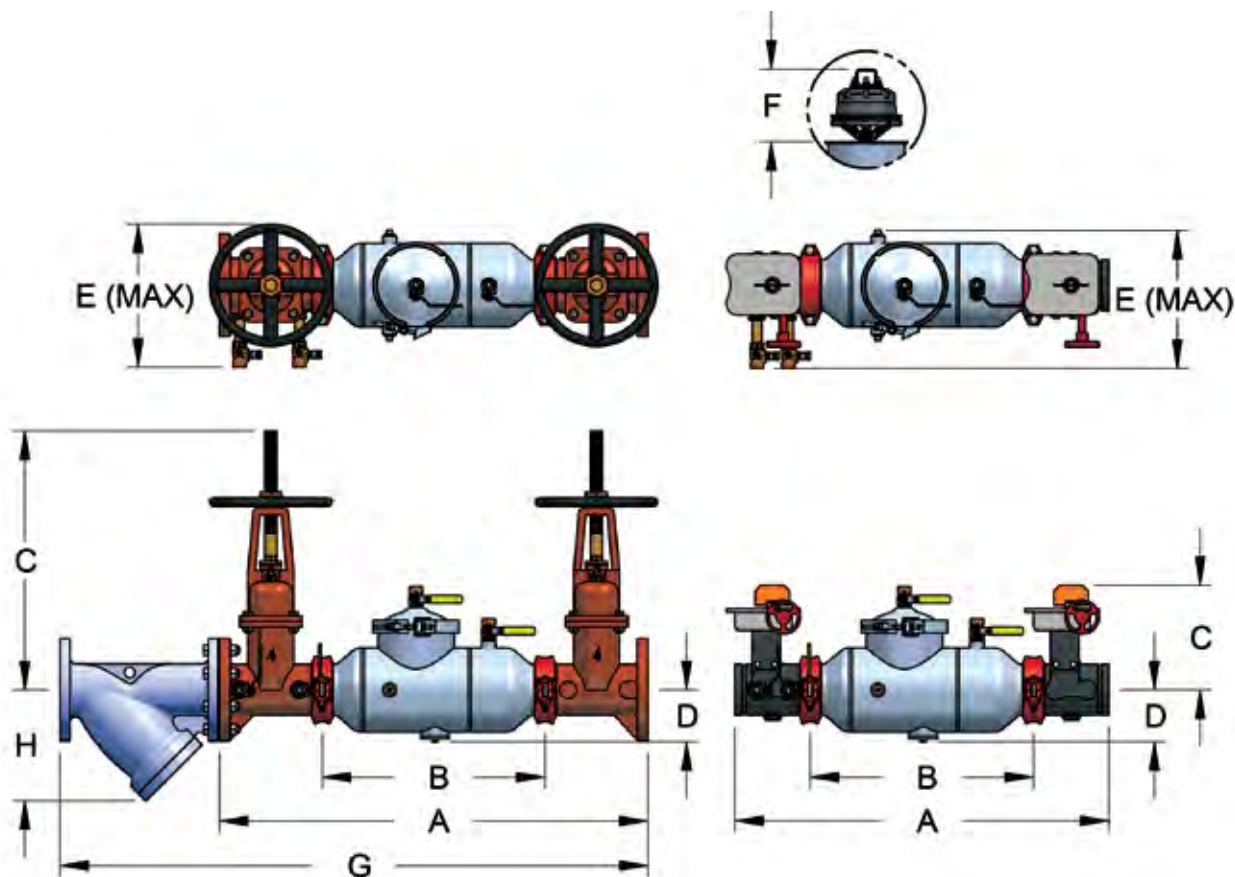
**4ALF 10A 03** = 4" size Lead Free Double Check Valve Assembly with OS&Y flanged inlet x OS&Y flanged outlet shut-off valves (shown above)



# BACKFLOW PREVENTION CATALOG

## Double Check Valve Backflow Preventers

### DC 4ALF SERIES



### DIMENSIONS

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ( $\pm 1/8"$  (3 mm) per joint)

See Page 56 For Flow Curves

| DIMENSIONS                    | 2-1/2"     | 60mm      | 3"         | 75mm      | 4"         | 100mm     | 6"         | 150mm     | 8"         | 200mm     | 10"        | 250mm     | 12"        | 300mm     |
|-------------------------------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|
| A (Butterfly Valves)          | 28 ±       | 711 ±     | 28-1/2 ±   | 724 ±     | 33-1/4 ±   | 845 ±     | 33-7/8 ±   | 860 ±     | 46-3/8 ±   | 1178 ±    | 52-1/4 ±   | 1327 ±    | N/A        | N/A       |
| A (Gate Valves)               | 31 ±       | 787 ±     | 32 ±       | 813 ±     | 38 ±       | 965 ±     | 45-7/8 ±   | 1165 ±    | 53-3/8 ±   | 1356 ±    | 62-1/4 ±   | 1581 ±    | 65-1/2 ±   | 1664 ±    |
| B (Less Shut-off Valves)      | 15-7/8 ±   | 403 ±     | 15-7/8 ±   | 403 ±     | 19-5/8 ±   | 498 ±     | 24-1/2 ±   | 622 ±     | 30 ±       | 762 ±     | 36 ±       | 914 ±     | 37 ±       | 940 ±     |
| C (Butterfly Valves)          | 8          | 203       | 8-3/8      | 213       | 9-1/8      | 233       | 10-1/8     | 257       | 12         | 306       | 13-5/8     | 346       | N/A        | N/A       |
| C (NRS/PI Gate Valves)        | 11-3/8     | 289       | 12-3/8     | 314       | 14-3/4     | 375       | 19         | 483       | 22-1/2     | 572       | 26-1/2     | 673       | 30         | 762       |
| C (OS&Y Open)                 | 16-3/8     | 416       | 18-7/8     | 467       | 22-3/4     | 578       | 30-1/8     | 765       | 37-3/4     | 959       | 45-3/4     | 1162      | 53-1/8     | 1349      |
| D (Centerline to bottom)      | 3-7/8      | 98        | 3-7/8      | 98        | 4-5/8      | 117       | 6          | 152       | 8 1/2      | 206       | 11-3/4     | 298       | 12         | 305       |
| E (Width Max)                 | 10-1/2     | 267       | 11         | 279       | 12-1/2     | 318       | 14-3/8     | 365       | 17-5/8     | 448       | 21         | 533       | 22         | 559       |
| F (Check Removal Clearance)   | 4-3/4      | 121       | 4-3/4      | 121       | 6-1/2      | 165       | 7-1/2      | 191       | 7-1/2      | 191       | 10         | 254       | 10         | 254       |
| G (With Strainer)             | 41-7/8     | 1064      | 43-5/8     | 1109      | 52         | 1321      | 64-1/2     | 1638      | 74-7/8     | 1902      | 88-3/8     | 2245      | 95-5/8     | 2429      |
| H (Strainer Clearance)        | 8          | 203       | 8-3/4      | 222       | 9-1/2      | 241       | 12-5/8     | 321       | 16-3/8     | 416       | 19         | 483       | 22         | 559       |
| Test Cocks (NPT)              | 1/2"       | 13        | 1/2"       | 13        | 1/2"       | 13        | 3/4"       | 20        | 3/4"       | 20        | 3/4"       | 20        | 3/4"       | 20        |
| <b>WEIGHTS</b>                | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> |
| Net Wt. (Less Shut-offs)      | 22         | 10        | 23         | 10        | 39         | 18        | 75         | 34        | 208        | 94        | 702        | 318       | 805        | 365       |
| Net Wt. (w/ Butterfly Valves) | 49         | 22        | 53         | 24        | 83         | 38        | 143        | 65        | 339        | 154       | 920        | 417       | N/A        | N/A       |
| Net Wt. (w/ NRS Gate Valves)  | 108        | 49        | 134        | 61        | 188        | 85        | 314        | 142       | 671        | 304       | 1548       | 702       | 1943       | 881       |
| Net Wt. (w/ OS&Y Gate Valves) | 118        | 54        | 144        | 65        | 194        | 88        | 324        | 147       | 685        | 311       | 1588       | 720       | 1997       | 906       |

#### Notes:

1. Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances (1/8" per joint).
2. Internal body connections are grooved on 2 1/2" – 10" sizes.
3. Internal body connections are flanged on 12" size.
4. Strainer option only available for flanged-end shut-off options.



For additional information, submittal sheets and manuals, visit [www.apollovalves.com](http://www.apollovalves.com)

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# BACKFLOW PREVENTION CATALOG

## Double Check Valve Backflow Preventers

### DC 4AnLF SERIES



n Flow



Sizes 2-1/2"-12"



TriForce™ Check



Optional Valve Setter (see pg 50)

### n STYLE DOUBLE CHECK VALVE ASSEMBLY

The Apollo® MODEL DC 4AnLF Double Check Valves are designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The TriForce™ center stem guided check valves feature replaceable and reversible silicone seat discs. The normally vertical up/vertical down oriented body incorporates an internal swivel connection providing the ability to pivot the second check. The n style flow body is domestic stainless steel from 2-1/2"-8" and FDA epoxy coated ductile iron in the 10" and 12". Available in a wide variety of shut-off valves.

#### OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. Each check valve is designed to maintain a minimum of 1 psi across the valve during normal operation. Should the downstream pressure increase to within 1 psi of supply pressure, both check valves will close to prevent a backflow condition.

#### FEATURES

- Domestic Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance - no special tools required
- Drop-in check retainers: 2-1/2"-6"
- Bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCCC&HR backflow preventer approval agencies
- Center stem guided TriForce™ check valves
- 5 year, domestic warranty
- **Lead-Free** standard
- USC FCC & HR\*
- Small installation space required - small footprint
- Chloramine-resistant elastomers
- ASSE 1015
- UL, ULC Classified
- FM approved
- Maximum working pressure 175 psi
- Temperature range 33°F - 140°F, 180°F intermittent
- Optional valve setters eliminate need for thrust blocks
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Made in the USA

\* Contact factory for approval details

#### MATERIALS

| Part               | Material                      |
|--------------------|-------------------------------|
| Body (2-1/2"-8")   | 304 Stainless Steel           |
| Body (10 & 12")    | FDA Epoxy Coated Ductile Iron |
| Covers (2-1/2"-6") | Glass Filled PPO/SS           |
| Covers (8")        | 304 Stainless Steel           |
| Covers(10 & 12")   | FDA Epoxy Coated Ductile Iron |
| Check Valves       | Bronze/Glass-filled PPO/SS    |
| Springs            | Stainless Steel               |
| Seat Discs         | Chloramine-resistant Silicone |

#### FACTORY CODE

| 4AnLF                      | 1 X  | X  | OX   |
|----------------------------|--|--|--|
|                            | Y-STRAINER                                       | SIZE   | SHUT-OFF VALVES  |
| 4AnLF = Lead Free Standard | 0 = Standard<br>1 = w/Y-strainer (shipped loose) | 9 = 2-1/2"<br>0 = 3"<br>A = 4"<br>C = 6"<br>E = 8"<br>G = 10"<br>H = 12" | 1 = Less Shut-off Valves<br>2 = NRS Flg x NRS Flg<br>3 = OS&Y Flg x OS&Y Flg<br>4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv†<br>6 = OS&Y Flg x Post indicator Flg**<br>7 = OS&Y Flg x OS&Y Grv<br>8 = OS&Y Grv x OS&Y Grv<br>9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv†<br>10 = OS&Y Flg x Post Indicator Grv**<br>11 = NRS Grv x NRS Grv<br>12 = NRS Flg x NRS Grv<br>13 = Post Indicator Flg x Mon. Butterfly Vlv Grv†<br>14 = Post Indicator Flg x Post Indicator Flg<br>16 = Mon Butterfly Vlv Grv x Post Indicator Flg†<br>17 = Post Indicator Flg x OS&Y Grv<br>18 = OS&Y Grv x Post Indicator Grv<br>19 = Mon. Butterfly Vlv Grv x Post Indicator Grv<br>20 = Post Indicator Flg x OS&Y Flg<br>** Post indicator with plate & nut option not available in 2-1/2" size.<br>† Butterfly valves not available in 12" size. |

Example:

**4AnLF 10A 03** = 4" size Lead Free Double Check Valve Assembly with OS&Y flanged inlet x OS&Y flanged outlet shut-off valves (shown above)

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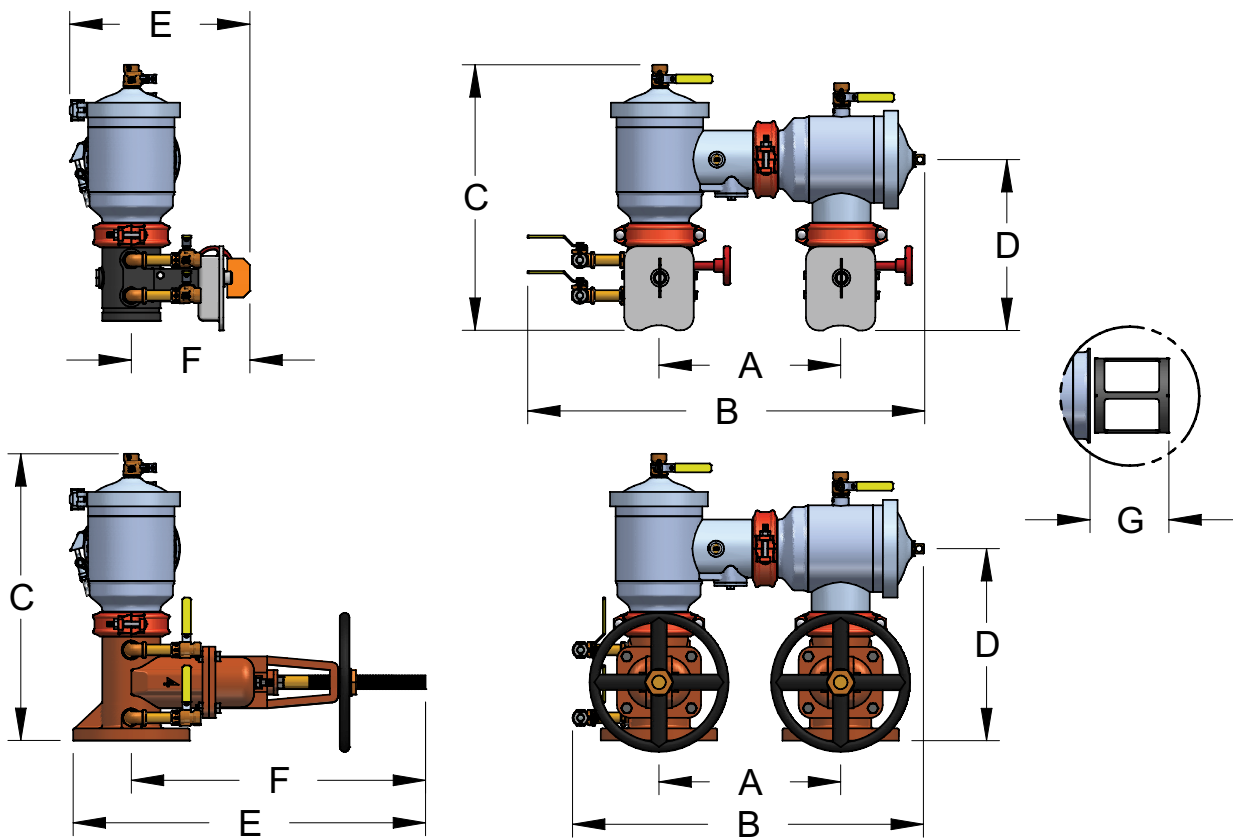




# BACKFLOW PREVENTION CATALOG

## Double Check Valve Backflow Preventers

### DC 4AnLF SERIES



### DIMENSIONS

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ( $\pm 1/8"$  (3 mm) per joint)

See Page 57 For Flow Curves

| DIMENSIONS                             | 2-1/2"              | 60mm             | 3"                  | 75mm             | 4"                  | 100mm            | 6"              | 150mm            | 8"                  | 200mm             | 10"             | 250mm             | 12"                 | 300mm             |
|--|---------------------|------------------|---------------------|------------------|---------------------|------------------|-----------------|------------------|---------------------|-------------------|-----------------|-------------------|---------------------|-------------------|
| A (Centerline to Centerline)           | 12-1/2 <sup>±</sup> | 318 <sup>±</sup> | 12-1/2 <sup>±</sup> | 318 <sup>±</sup> | 14 <sup>±</sup>     | 356 <sup>±</sup> | 16 <sup>±</sup> | 406 <sup>±</sup> | 18-1/2 <sup>±</sup> | 470 <sup>±</sup>  | 21 <sup>±</sup> | 533 <sup>±</sup>  | 26-3/4 <sup>±</sup> | 679 <sup>±</sup>  |
| B Lay Length Space (Butterfly Valves)  | 27-1/2 <sup>±</sup> | 699 <sup>±</sup> | 27-1/2 <sup>±</sup> | 699 <sup>±</sup> | 30-3/4 <sup>±</sup> | 781 <sup>±</sup> | 36 <sup>±</sup> | 914 <sup>±</sup> | 37-3/8 <sup>±</sup> | 949 <sup>±</sup>  | 43 <sup>±</sup> | 1092 <sup>±</sup> | N/A                 | N/A               |
| B Lay Length Space (Gate Valves)       | 24-1/2 <sup>±</sup> | 662 <sup>±</sup> | 24-1/2 <sup>±</sup> | 662 <sup>±</sup> | 27 <sup>±</sup>     | 686 <sup>±</sup> | 32 <sup>±</sup> | 813 <sup>±</sup> | 40-3/4 <sup>±</sup> | 1035 <sup>±</sup> | 49 <sup>±</sup> | 1245 <sup>±</sup> | 55-3/4 <sup>±</sup> | 1416 <sup>±</sup> |
| C (Butterfly Valves)                   | 18-1/4              | 464              | 18-1/2              | 470              | 20                  | 508              | 24-3/4          | 629              | 28-1/2              | 724               | 35              | 889               | N/A                 | N/A               |
| C (Gate Valves)                        | 19-5/8              | 498              | 20                  | 608              | 22-1/2              | 572              | 27-3/4          | 705              | 32-1/8              | 816               | 40              | 1016              | 44                  | 1118              |
| D (Centerline to bottom Butterfly Vlv) | 11-1/2              | 292              | 11-3/4              | 298              | 13-1/4              | 337              | 15-3/8          | 391              | 17-7/8              | 453               | 19-3/4          | 502               | N/A                 | N/A               |
| D (Centerline to bottom Gate Valve)    | 13                  | 330              | 13-1/2              | 343              | 14-7/8              | 378              | 18              | 457              | 21-3/8              | 543               | 24-3/4          | 629               | 28-3/4              | 730               |
| E (Butterfly Valves)                   | 11-1/2              | 292              | 12-1/8              | 308              | 12-7/8              | 327              | 15-7/8          | 403              | 22-1/4              | 556               | 23-1/8          | 587               | N/A                 | N/A               |
| E (NRS/PI Valves)                      | 14-7/8              | 378              | 16-1/8              | 410              | 19-1/4              | 489              | 24-1/2          | 622              | 29-1/4              | 743               | 36-3/8          | 924               | 40                  | 1016              |
| E (OS&Y Open Valves)                   | 19-7/8              | 505              | 24-1/4              | 616              | 27-1/4              | 692              | 32-3/4          | 832              | 44-1/2              | 1130              | 54              | 1372              | 62-3/4              | 1594              |
| F (Butterfly Valves)                   | 8                   | 703              | 8-3/8               | 213              | 9                   | 229              | 10-7/8          | 276              | 12-7/8              | 327               | 13-1/2          | 343               | N/A                 | N/A               |
| F (NRS/PI Valves)                      | 11-3/8              | 289              | 12-3/8              | 314              | 14-3/4              | 375              | 19              | 483              | 22-1/2              | 572               | 26-1/2          | 673               | 30                  | 762               |
| F (OS&Y Open Valves)                   | 16-3/8              | 416              | 20-1/2              | 521              | 22-3/4              | 578              | 28              | 711              | 37-3/4              | 959               | 46              | 1168              | 53-1/8              | 1349              |
| G (Check Removal Clearance)            | 6                   | 152              | 6                   | 152              | 6                   | 152              | 8               | 203              | 8-1/2               | 216               | 12              | 305               | 12                  | 305               |
| Test Cocks (NPT)                       | 1/2"                | 13               | 1/2"                | 13               | 1/2"                | 13               | 3/4"            | 20               | 3/4"                | 20                | 3/4"            | 20                | 3/4"                | 20                |
| <b>WEIGHTS</b>                         | <b>lb.</b>          | <b>kg</b>        | <b>lb.</b>          | <b>kg</b>        | <b>lb.</b>          | <b>kg</b>        | <b>lb.</b>      | <b>kg</b>        | <b>lb.</b>          | <b>kg</b>         | <b>lb.</b>      | <b>kg</b>         | <b>lb.</b>          | <b>kg</b>         |
| Net Wt. (Less Shut-offs)               | 30                  | 14               | 30                  | 14               | 39                  | 18               | 74              | 34               | 305                 | 138               | 785             | 356               | 910                 | 413               |
| Net Wt. (w/ Butterfly Valves)          | 57                  | 26               | 60                  | 27               | 84                  | 38               | 142             | 64               | 436                 | 198               | 963             | 437               | N/A                 | N/A               |
| Net Wt. (w/NRS Gate Valves)            | 116                 | 53               | 141                 | 64               | 188                 | 85               | 313             | 142              | 768                 | 348               | 1431            | 649               | 2047                | 929               |
| Net Wt. (w/ OS&Y Gate Valves)          | 126                 | 57               | 151                 | 69               | 194                 | 88               | 323             | 147              | 782                 | 355               | 1453            | 659               | 2101                | 953               |

#### Notes:

1. Internal body connections are grooved on 2-1/2" to 10" sizes.
2. Internal body connections are flanged on 12" size.



For additional information, submittal sheets and manuals, visit [www.apollovalves.com](http://www.apollovalves.com)

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# BACKFLOW PREVENTION CATALOG

## Double Check Detector Backflow Preventers

### DCDA 4ALF SERIES



Sizes 2-1/2"-12"



TriForce™ Check

### DCDA 4ALF DOUBLE CHECK DETECTOR ASSEMBLY

The Apollo® MODEL DCDA 4ALF Double Check Detector Assembly is designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The TriForce™ center stem guided check valves feature replaceable and reversible silicone seat discs. The by-pass assembly serves to measure accurate water use of up to 2 GPM. Available in a wide variety of shut-off options.

The Type 2 bypass uses the first check of the mainline assembly as the first check of the bypass. The second check of the bypass is a single check valve with a model number and serial number for test recording. This arrangement is approved by the Tenth Edition of the USC FCC&HR Manual of Cross Connection Control as well as ASSE. The arrangement provides the same level of protection as the original (still optional) Type 1 bypass and the testing procedure is the same.

#### FEATURES

- Domestic Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance - no special tools required
- Drop-in check retainers: 2-1/2"-6"
- Bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCC&HR backflow preventer approval agencies
- Center stem guided TriForce™ check valves
- Approved for horizontal and vertical up flow\*
- Chloramine-resistant elastomers
- **Lead-Free** standard
- USC FCC & HR†
- ASSE 1048
- UL, ULC Classified
- FM approved
- CSA B64.5
- Maximum working pressure 175 psi
- Temperature range 33°F - 140°F, 180°F intermittent
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Made in the USA
- 5 year, domestic warranty
- Optional mounting of bypass on either side for ease of installation

\* Contact factory for approval details

#### MATERIALS

| Part               | Material                      |
|--------------------|-------------------------------|
| Body (2-1/2"-8")   | 304 Stainless Steel           |
| Body (10 & 12")    | FDA Epoxy Coated Ductile Iron |
| Covers (2-1/2"-6") | Glass Filled PPO/SS           |
| Covers (8")        | 304 Stainless Steel           |
| Covers (10 & 12")  | FDA Epoxy Coated Ductile Iron |
| Check Valves       | Bronze/Glass-filled PPO/SS    |
| Springs            | Stainless Steel               |
| Seat Discs         | Chloramine-resistant Silicone |

#### FACTORY CODE

| 4ALF             | 6 X   | X  | X   | [X]   |
|------------------|---|--|---|---|
|                  | BY-PASS SUB-ASSEMBLY OPTIONS  | SIZE   | METER OPTION  | SHUT-OFF VALVES (Inlet X Outlet)  |
| 4ALF = Lead Free | 0 = Type 1 w/ 1/2" Double Check<br>2 = Type 2 w/ 1/2" Single Check (Standard)<br>3 = Type 1 w/ bypass on left*<br>4 = Type 2 w/ bypass on left* | 9 = 2-1/2"<br>0 = 3"<br>A = 4"<br>C = 6"<br>E = 8"<br>G = 10"<br>H = 12" | C = Cubic feet/min<br>E = Gallons/min<br>G = Less meter | 1 = Less Shut-off Valves<br>3 = OS&Y Flg x OS&Y Flg<br>4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv†<br>6 = OS&Y Flg x Post indicator Flg**<br>7 = OS&Y Flg x OS&Y Grv<br>8 = OS&Y Grv x OS&Y Grv<br>9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv†<br>10 = OS&Y Flg x Post Indicator Grv**<br>13 = Post Indicator Flg x Mon. Butterfly Vlv Grv†<br>14 = Post Indicator Flg x Post Indicator Flg<br>16 = Mon Butterfly Vlv Grv x Post Indicator Flg†<br>17 = Post Indicator Flg x OS&Y Grv<br>18 = OS&Y Grv x Post Indicator Grv<br>19 = Mon. Butterfly Vlv Grv x Post Indicator Grv<br>20 = Post Indicator Flg x OS&Y Flg |

Example:

**4ALF 60A E3** = 4" size Lead Free Double Check Detector Assembly with OS&Y flanged inlet x OS&Y flanged outlet shut-off valves w/ meter in gallons.

\* Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side

\*\* Post indicator with plate & nut option not available in 2-1/2" size.

† Butterfly valves not available in 12" size.

www.apollovalves.com

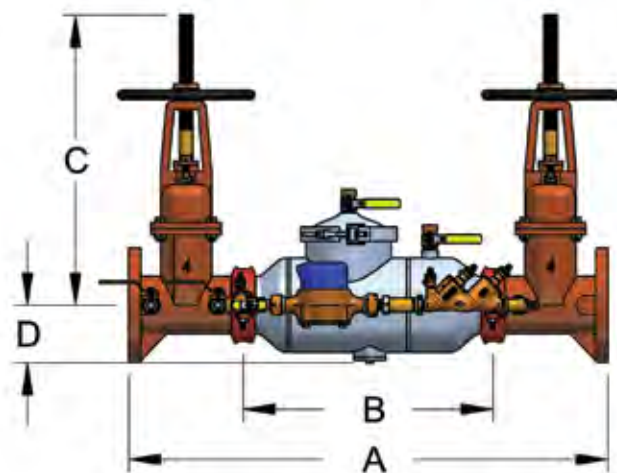
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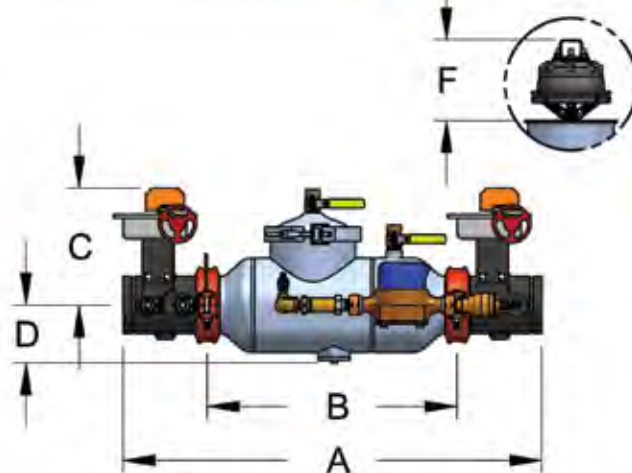
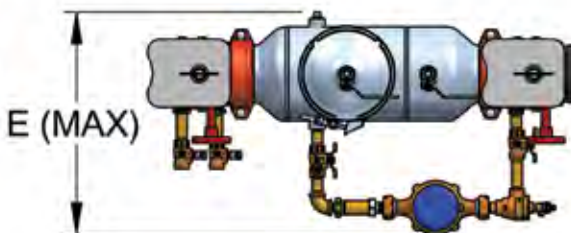
# BACKFLOW PREVENTION CATALOG

## Double Check Detector Backflow Preventers

### DCDA 4ALF SERIES



TYPE 1 BYPASS



TYPE 2 BYPASS (STANDARD)

## DIMENSIONS

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ( $\pm 1/8"$  (3 mm) per joint)

See Page 59 For Flow Curves

| DIMENSIONS                    | 2-1/2"     | 60mm      | 3"         | 75mm      | 4"         | 100mm     | 6"         | 150mm     | 8"         | 200mm     | 10"        | 250mm     | 12"        | 300mm     |
|-------------------------------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|
| A (Butterfly Valves)          | 28 ±       | 711 ±     | 28-1/2 ±   | 724 ±     | 33-1/4 ±   | 845 ±     | 38-7/8 ±   | 987 ±     | 46-3/8 ±   | 1178 ±    | 52-1/4 ±   | 1378 ±    | N/A        | N/A       |
| A (Gate Valves)               | 31 ±       | 787 ±     | 32 ±       | 813 ±     | 38 ±       | 965 ±     | 45-7/8 ±   | 1165 ±    | 53-3/8 ±   | 1356 ±    | 62-1/4 ±   | 1581 ±    | 65-1/2 ±   | 1664 ±    |
| B (Less Shut-off Valves)      | 15-7/8 ±   | 403 ±     | 15-7/8 ±   | 403 ±     | 19-5/8 ±   | 498 ±     | 24-1/2 ±   | 622 ±     | 30 ±       | 762 ±     | 36 ±       | 914 ±     | 37 ±       | 940 ±     |
| C (Butterfly Valves)          | 8          | 203       | 8-3/8      | 213       | 9-1/8      | 233       | 10-1/8     | 257       | 12         | 306       | 13-3/8     | 340       | N/A        | N/A       |
| C (NRS/PI Gate Valves)        | 11-3/8     | 289       | 12-3/8     | 314       | 14-3/4     | 375       | 19         | 483       | 22-1/2     | 572       | 26-1/2     | 673       | 30         | 762       |
| C (OS&Y Open)                 | 16-3/8     | 416       | 18-7/8     | 479       | 22-3/4     | 578       | 30-1/8     | 765       | 37-3/4     | 959       | 45-3/4     | 1162      | 53-1/8     | 1348      |
| D (Centerline to bottom)      | 3-7/8      | 98        | 3-7/8      | 98        | 4-5/8      | 117       | 6          | 152       | 8-1/8      | 206       | 11-3/4     | 298       | 12         | 305       |
| E (Width Max)                 | 17         | 432       | 17         | 432       | 17         | 432       | 20         | 508       | 21-1/2     | 546       | 26-1/2     | 673       | 26-1/2     | 673       |
| F (Check Removal Clearance)   | 4-3/4      | 121       | 4-3/4      | 121       | 6-1/2      | 165       | 7-1/2      | 191       | 7-1/2      | 191       | 10         | 254       | 10         | 254       |
| Test Cocks (NPT)              | 1/2"       | 13        | 1/2"       | 13        | 1/2"       | 20        | 3/4"       | 20        | 3/4"       | 20        | 3/4"       | 20        | 3/4"       | 20        |
| <b>WEIGHTS</b>                | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> |
| Net Wt. (Less Shut-offs)      | 37         | 17        | 38         | 17        | 54         | 25        | 90         | 41        | 223        | 101       | 722        | 327       | 825        | 374       |
| Net Wt. (w/ Butterfly Valves) | 64         | 29        | 68         | 31        | 98         | 45        | 158        | 72        | 354        | 161       | 940        | 426       | N/A        | N/A       |
| Net Wt. (w/ OS&Y Gate Valves) | 133        | 60        | 159        | 72        | 209        | 95        | 339        | 154       | 700        | 318       | 1608       | 729       | 2017       | 915       |

#### Notes:

1. Internal body connections are grooved on 2-1/2" to 10" sizes.
2. Internal body connections are flanged on 12" size.



# BACKFLOW PREVENTION CATALOG

## Double Check Detector Backflow Preventers

### DCDA 4AnLF SERIES



Sizes 2-1/2"-12"



Optional Valve Setter (see pg 50)

### N STYLE DOUBLE CHECK DETECTOR ASSEMBLY

The Apollo® MODEL DC 4AnLF Double Check Valves are designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The TriForce™ center stem guided check valves feature replaceable and reversible silicone seat discs. The by-pass assembly serves to measure water use of up to 2 GPM. The normally vertical up/vertical down oriented body incorporates an internal swivel connection providing the ability to pivot the second check. The grooved connections on the bodies from 2-1/2" to 10" allow for easy connection to butterfly or gate shut-off valves. The 12" DCDA 4An has flanged connections for gate shut-off valves.

The Type 2 bypass uses the first check of the mainline assembly as the first check of the bypass. The second check of the bypass is a single check valve with a model number and serial number for test recording. This arrangement is approved by the Tenth Edition of the USC FCC&HR Manual of Cross Connection Control as well as ASSE. The arrangement provides the same level of protection as the original (still optional) Type 1 bypass and the testing procedure is the same.

#### FEATURES

- Domestic Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance - no special tools required
- Drop-in check retainers: 2-1/2"-6"
- Bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCC&HR backflow preventer approval agencies
- Center stem guided TriForce™ check valves
- 5 year, domestic warranty
- Small installation space required - small footprint
- Chloramine-resistant elastomers
- **Lead-Free** standard
- USC FCC & HR\*
- ASSE 1048
- UL, ULC Classified
- CSA B64.5
- FM approved
- Maximum working pressure 175 psi
- Temperature range 33°F - 140°F, 180°F intermittent
- Optional valve setters eliminate need for thrust blocks below grade
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Made in the USA
- Optional mounting of bypass on either side for ease of installation

\* Contact factory for approval details

#### MATERIALS

| Part               | Material                      |
|--------------------|-------------------------------|
| Body (2-1/2"-8")   | 304 Stainless Steel           |
| Body (10 & 12")    | FDA Epoxy Coated Ductile Iron |
| Covers (2-1/2"-6") | Glass Filled PPO/SS           |
| Covers (8")        | 304 Stainless Steel           |
| Covers (10 & 12")  | FDA Epoxy Coated Ductile Iron |
| Relief Valve       | Bronze C84400/LF C89836       |
| Check Valves       | Bronze/Glass-filled PPO/SS    |
| Springs            | Stainless Steel               |
| Seat Discs         | Chloramine-resistant Silicone |

#### FACTORY CODE

| 4AnLF             | 6 X   | X   | X [X]  |   |
|-------------------|---|---|--|---|
|                   | BY-PASS SUB-ASSEMBLY OPTIONS  | SIZE  | METER OPTION   | SHUT-OFF VALVES (Inlet X Outlet)  |
| 4AnLF = Lead Free | 0= Type 1 w/ 1/2" Double Check<br>2= Type 2 w/ 1/2" Single Check (Standard)<br>3= Type 1 w/ bypass on left*<br>4= Type 2 w/ bypass on left* | 9= 2-1/2"<br>0= 3"<br>A= 4"<br>C= 6"<br>E= 8"<br>G= 10"<br>H= 12" | C= Cubic feet/min<br>E= Gallons/min<br>G= Less meter | 1 = Less Shut-off Valves<br>3 = OS&Y Flg x OS&Y Flg<br>4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv†<br>6 = OS&Y Flg x Post indicator Flg**<br>7 = OS&Y Flg x OS&Y Grv<br>8 = OS&Y Grv x OS&Y Grv<br>9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv†<br>10 = OS&Y Flg x Post Indicator Grv**<br>13 = Post Indicator Flg x Mon. Butterfly Vlv Grv†<br>14 = Post Indicator Flg x Post Indicator Flg<br>16 = Mon Butterfly Vlv Grv x Post Indicator Flg†<br>17 = Post Indicator Flg x OS&Y Grv<br>18 = OS&Y Grv x Post Indicator Grv<br>19 = Mon. Butterfly Vlv Grv x Post Indicator Grv<br>20 = Post Indicator Flg x OS&Y Flg |

Example:

**4AnLF 62A E7** = 4" size Lead Free Double Check Detector Assembly with OS&Y flanged inlet x OS&Y grooved outlet

Example:  
**4AnLF 62A E7** = 4" size Lead Free Double Check Detector Assembly with OS&Y flanged inlet x OS&Y grooved outlet shut-off valves with Type 2 bypass w/ meter in GPM

\* Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side

\*\* Post indicator with plate & nut option not available in 2-1/2" size.

† Butterfly valves not available in 12" size.

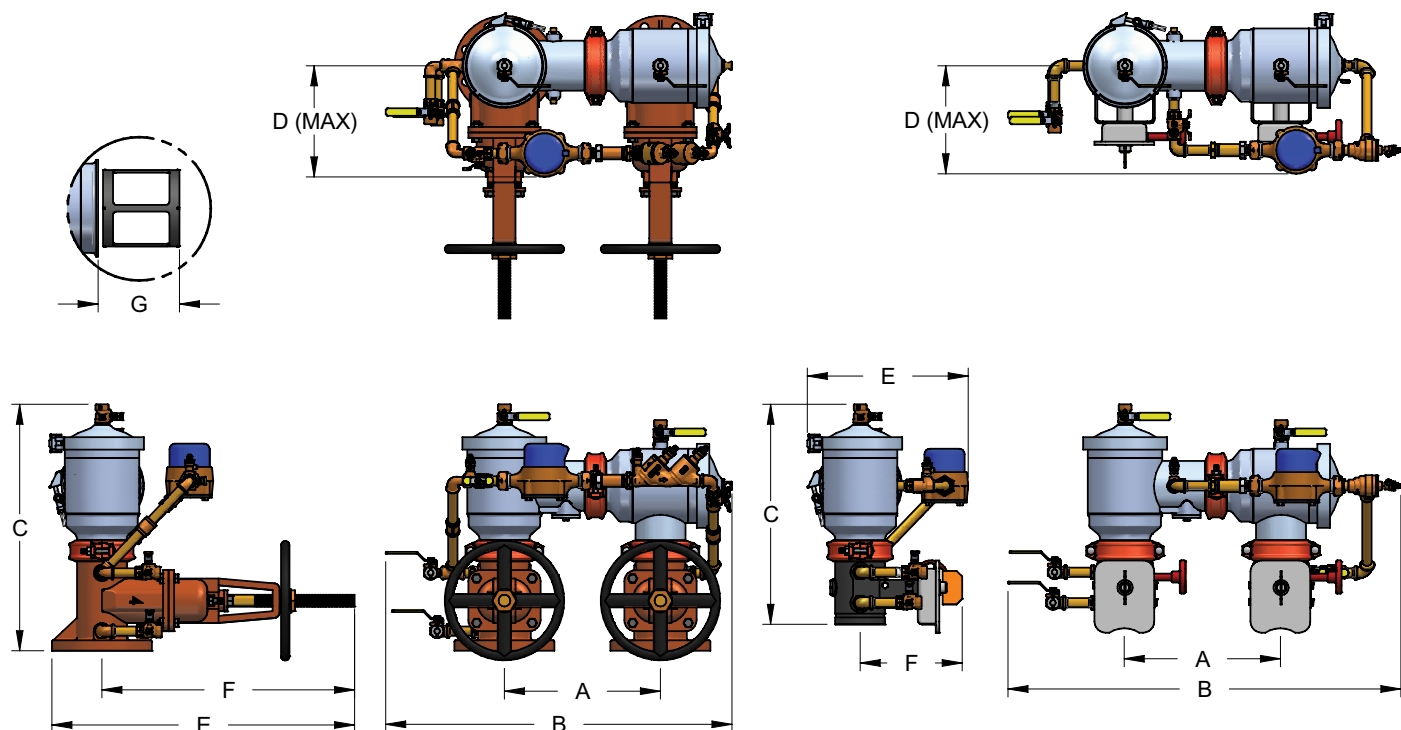
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# BACKFLOW PREVENTION CATALOG

## Double Check Detector Backflow Preventers

### DCDA 4AnLF SERIES



Type 1 Bypass

Type 2 Bypass (Standard)

## DIMENSIONS

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ( $\pm 1/8"$  (3 mm) per joint)

See Page 60 For Flow Curves

| DIMENSIONS                    | 2-1/2"   | 60mm  | 3"       | 75mm  | 4"       | 100mm | 6"       | 150mm  | 8"       | 200mm  | 10"    | 250mm  | 12"      | 300mm  |
|-------------------------------|----------|-------|----------|-------|----------|-------|----------|--------|----------|--------|--------|--------|----------|--------|
| A (Centerline to Centerline)  | 12-1/2 ± | 318 ± | 12.5 ±   | 318 ± | 14 ±     | 356 ± | 16 ±     | 406 ±  | 18-1/2 ± | 470 ±  | 21 ±   | 533 ±  | 26-3/4 ± | 679 ±  |
| B (Butterfly Valves)          | 32-3/4 ± | 832 ± | 32-3/4 ± | 832 ± | 35-1/4 ± | 895 ± | 40 ±     | 1016 ± | 44 ±     | 1118 ± | 54 ±   | 1372 ± | N/A      | N/A    |
| B (Gate Valves)               | 31 ±     | 787 ± | 31 ±     | 787 ± | 31-3/4 ± | 806 ± | 36-1/4 ± | 921 ±  | 41-1/2 ± | 1054 ± | 49 ±   | 1245 ± | 55-3/4 ± | 1416 ± |
| C (Butterfly Valves)          | 18-1/4   | 464   | 18-1/2   | 470   | 20       | 508   | 24-3/4   | 629    | 28-1/2   | 724    | 35     | 889    | N/A      | N/A    |
| C (Gate Valves)               | 19-5/8   | 498   | 20       | 508   | 22-1/2   | 572   | 27-3/4   | 705    | 32-1/8   | 816    | 40     | 1016   | 44       | 1118   |
| D (Centerline to max bypass)  | 10       | 254   | 10       | 254   | 10-1/8   | 257   | 11-1/4   | 286    | 12-1/2   | 318    | 14-3/8 | 365    | 15-1/4   | 387    |
| E (Butterfly Valves)          | 11-1/2   | 292   | 12-1/8   | 308   | 12-7/8   | 327   | 15-7/8   | 403    | 22-1/4   | 565    | 23-1/8 | 591    | N/A      | N/A    |
| E (OS&Y Open)                 | 19-7/8   | 505   | 24-1/4   | 616   | 27-1/4   | 692   | 32-3/4   | 832    | 44-1/2   | 1130   | 54     | 1372   | 62-3/4   | 1594   |
| E (NRS/PI)                    | 14-7/8   | 378   | 16-1/8   | 410   | 19-1/4   | 489   | 24-1/2   | 622    | 29-1/4   | 743    | 36-3/8 | 924    | 40       | 1016   |
| F (Check Removal Clearance)   | 6        | 152   | 6        | 152   | 6        | 152   | 8        | 203    | 8-1/2    | 206    | 12     | 305    | 12       | 305    |
| Test Cocks (NPT)              | 1/2"     | 13    | 1/2"     | 13    | 1/2"     | 13    | 3/4"     | 20     | 3/4"     | 20     | 3/4"   | 20     | 3/4"     | 20     |
| WEIGHTS                       | lb.      | kg    | lb.      | kg    | lb.      | kg    | lb.      | kg     | lb.      | kg     | lb.    | kg     | lb.      | kg     |
| Net Wt. (Less Shut-offs)      | 45       | 20    | 45       | 20    | 54       | 25    | 89       | 40     | 320      | 145    | 805    | 365    | 930      | 422    |
| Net Wt. (w/ Butterfly Valves) | 72       | 33    | 75       | 34    | 99       | 45    | 157      | 71     | 451      | 205    | 983    | 446    | N/A      | N/A    |
| Net Wt. (w/ OS&Y Gate Valves) | 141      | 64    | 166      | 75    | 209      | 95    | 338      | 153    | 797      | 362    | 1473   | 668    | 2121     | 962    |

#### Notes:

1. Internal body connections are grooved on 2-1/2" to 10" sizes.
2. Internal body connections are flanged on 12" size.

# BACKFLOW PREVENTION CATALOG

## Double Check Valve Backflow Preventers

### DC 4SG SERIES



### DC 4SG SERIES DOUBLE CHECK VALVE ASSEMBLY

The Apollo® DC 4SG Series Double Check Valve is designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are non-health hazards. The modular check valves have replaceable seats and reversible EPDM seat discs. Grooved connections on an epoxy-coated ductile iron body allow for easy connection to butterfly valves or gate valves.

#### FEATURES

- Lightweight
- Short lay length
- Low pressure loss
- Modular check valves
- Individual access to check valves
- Reversible/replaceable seat discs
- Approved for vertical (up) and horizontal installations
- Gate valves epoxy coated (FDA)
- **Lead-Free** option (2-1/2" - 6" only)
- Corrosion resistant epoxy-coated ductile iron body
- ASSE 1015
- CSA
- USC FCCCHR
- AWWA C-510
- UL Classified
- FM approved
- US Patents #5,711,341 and #6,343,618

#### MATERIALS

| Part                       | Material                        |
|----------------------------|---------------------------------|
| Body                       | Epoxy-coated (FDA) Ductile Iron |
| Covers (2-1/2" - 6")       | Epoxy-coated (FDA) Steel        |
| Covers (8", 10")           | Epoxy-coated (FDA) Ductile Iron |
| Check Valves (2-1/2" - 6") | Glass-Filled PPO                |
| Check Valves (8"-10")      | Bronze C84400                   |
| Springs                    | Stainless Steel                 |
| Seat Discs                 | Chloramine-resistant EPDM       |
| Test Cock Handles          | Stainless Steel                 |

### FACTORY CODE

| 4SG [X]            | 1 X X                         |           | 0 X   | X               |
|--------------------|-------------------------------|-----------|---|-----------------|
|                    | Y-STRAINER                    | SIZE      | SHUT-OFF VALVES (Inlet x Outlet)                    | FLOW (OPTIONAL) |
| 4SG = Standard     | 0= None (Standard)            | 9= 2-1/2" | 1 = Less Shut-off Valves (grooved-end body)         | N= n Flow       |
| 4SG LF = Lead Free | 1= With Y-Strainer            | 0= 3"     | 2 = NRS Flg x NRS Flg                               |                 |
| (2-1/2"-6" only)   | (Flanged only, shipped loose) | A= 4"     | 3 = OS&Y Flg x OS&Y Flg                             |                 |
| 4S = 10"           |                               | C= 6"     | 4 = OS&Y Flg x Monitored Butterfly Valve Grv        |                 |
|                    |                               | E= 8"     | 6 = OS&Y Flg x Flg Post Indicator**                 |                 |
|                    |                               | G= 10"#   | 7 = OS&Y Flg x OS&Y Grv                             |                 |
|                    |                               |           | 8 = OS&Y Grv x OS&Y Grv                             |                 |
|                    |                               |           | 9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv |                 |
|                    |                               |           | 10 = OS&Y Flg x Grv Post Indicator**                |                 |

# 10" body is flanged internal connections only (Model 4S)

\*\*Post indicator option not available in 2-1/2" size

Example:

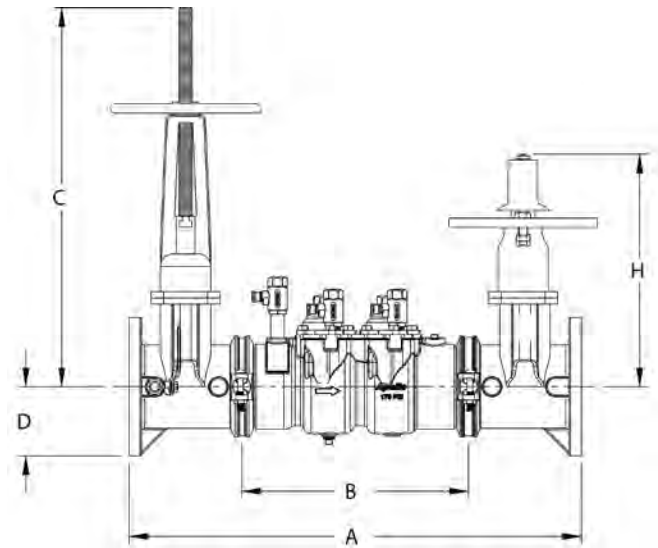
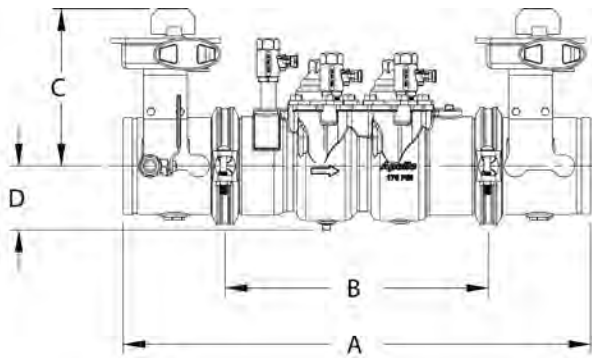
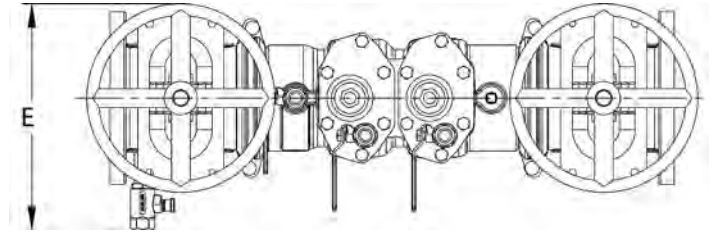
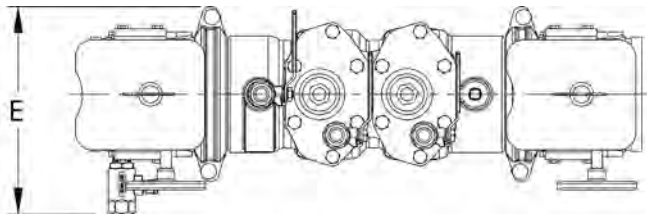
**4SG 10A 07** = 4" size Double Check Valve Assembly with OS&Y flanged inlet x OS&Y grooved outlet shut-off valves



# BACKFLOW PREVENTION CATALOG

## Double Check Valve Backflow Preventers

### DC 4S SERIES



### DIMENSIONS

See Page 58 For Flow Curves

| Model No.<br>Factory No.<br>Size | DC4SG212<br>4SG-109<br>2 1/2" | DC4SG212<br>4SG-109<br>65 mm. | DC4SG3<br>4SG-100<br>3" | DC4SG3<br>4SG-100<br>80 mm. | DC4SG4<br>4SG-10A<br>4" | DC4SG4<br>4SG-10A<br>100 mm. | DC4SG6<br>4SG-10C<br>6" | DC4SG6<br>4SG-10C<br>150 mm. | DC4SG8<br>4SG-10E<br>8" | DC4SG8<br>4SG-10E<br>200 | DC4S10<br>4S-10G<br>10" | DC4S10<br>4S-10G<br>250 |
|----------------------------------|-------------------------------|-------------------------------|-------------------------|-----------------------------|-------------------------|------------------------------|-------------------------|------------------------------|-------------------------|--------------------------|-------------------------|-------------------------|
| A (Butterfly Valves)*            | 29                            | 737                           | 29-1/2                  | 749                         | 29-3/4                  | 756                          | 32-1/2                  | 815                          | 43                      | 1092                     | N/A                     | N/A                     |
| A (Gate Valves)*                 | 32                            | 813                           | 33                      | 838                         | 34-1/2                  | 876                          | 39                      | 991                          | 50-1/4                  | 1276                     | 55-3/4                  | 1416                    |
| B (Grooved End Body)             | 17                            | 432                           | 17                      | 432                         | 16-1/2                  | 419                          | 18                      | 457                          | 27                      | 686                      | 29-1/2                  | 750                     |
| C (Butterfly Valves)             | 8                             | 200                           | 8-1/2                   | 216                         | 9-1/4                   | 235                          | 10-1/4                  | 260                          | 12                      | 300                      | N/A                     | N/A                     |
| C (OS&Y Open)                    | 16-3/8                        | 416                           | 18-7/8                  | 479                         | 22-3/4                  | 578                          | 30-1/8                  | 765                          | 37-3/4                  | 959                      | 46                      | 1168                    |
| D (Butterfly Valves)             | 4-1/2                         | 114                           | 4-1/2                   | 114                         | 4-1/2                   | 114                          | 4-1/2                   | 114                          | 6-1/2                   | 165                      | N/A                     | N/A                     |
| D (Gate Valves)                  | 3-1/2                         | 89                            | 3-3/4                   | 95                          | 4-1/2                   | 114                          | 5-1/2                   | 140                          | 6-3/4                   | 171                      | 8.0                     | 203                     |
| E (Butterfly Valves)             | 9                             | 229                           | 9                       | 229                         | 9-1/2                   | 241                          | 12                      | 300                          | 15                      | 381                      | N/A                     | N/A                     |
| E (Gate Valves)                  | 9-5/8                         | 244                           | 10-3/8                  | 264                         | 11-7/8                  | 302                          | 14-5/8                  | 371                          | 16-3/4                  | 425                      | 18.0                    | 457                     |
| H (Post Indicator Valve)         | 14.75                         | 375                           | 14.80                   | 376                         | 14.80                   | 376                          | 18.75                   | 476                          | 23.42                   | 595                      | 26.5                    | 673                     |
| Test Cocks (NPT)                 | 1/2                           | 1/2                           | 1/2                     | 1/2                         | 1/2                     | 1/2                          | 3/4                     | 3/4                          | 3/4                     | 3/4                      | 3/4                     | 3/4                     |
| <b>WEIGHTS</b>                   | <b>lbs.</b>                   | <b>kg.</b>                    | <b>lbs.</b>             | <b>kg.</b>                  | <b>lbs.</b>             | <b>kg.</b>                   | <b>lbs.</b>             | <b>kg.</b>                   | <b>lbs.</b>             | <b>kg.</b>               | <b>lbs.</b>             | <b>kg.</b>              |
| Net Wt. (Less Valves)            | 53                            | 24                            | 53                      | 24                          | 53                      | 24                           | 60                      | 27                           | 375                     | 170                      | 470                     | 213                     |
| Net Wt. (w/Butterfly Valves)     | 80                            | 36                            | 83                      | 38                          | 97                      | 44                           | 128                     | 58                           | 506                     | 230                      | N/A                     | N/A                     |
| Net Wt. (w/OS&Y Valves)          | 149                           | 68                            | 174                     | 79                          | 208                     | 94                           | 309                     | 140                          | 852                     | 386                      | 1320                    | 599                     |

\*Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances.

# BACKFLOW PREVENTION CATALOG

## Double Check Detector Backflow Preventers

### DCDA 4SG SERIES



Sizes 2-1/2", 3", 4", 6", 8", 10"

### DCDA 4SG SERIES DOUBLE CHECK DETECTOR ASSEMBLY

The Apollo® DCDA 4SG Series Double Check Detector Assembly is designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are non-health hazards. The device consists of a mainline double check valve with resilient seated shut-off valves. The by-pass serves to measure water use of up to 3 gpm. Grooved connections on an epoxy-coated ductile iron body allow for easy connection to butterfly valves or gate valves.

#### FEATURES

- Lightweight
- Short lay length
- Low pressure loss
- Modular check valves
- Individual access to check valves
- Reversible/replaceable seat discs
- Approved for vertical and horizontal installations
- **Lead-Free** option (2-1/2" - 6" only)
- Gate valves epoxy coated (FDA)
- Corrosion resistant FDA epoxy-coated ductile iron body
- UL Classified
- FM approved
- USC FCCCHR
- ASSE 1048
- CSA
- US Patents #5,711,341 and #6,343,618

#### MATERIALS

| Part                       | Material                        |
|----------------------------|---------------------------------|
| Body (mainline)            | Epoxy-coated (FDA) Ductile Iron |
| Bypass DC                  | Bronze (C84400, LF C89836)      |
| Covers (2-1/2" - 6")       | Epoxy-coated (FDA) Steel        |
| Covers (8")                | Epoxy-coated (FDA) Ductile Iron |
| Check Valves (2-1/2" - 6") | Glass-Filled PPO                |
| Check Valves (8")          | Bronze (C84400, LF C89836)      |
| Springs                    | Stainless Steel                 |
| Seat Discs                 | Chloramine-Resistant EPDM       |
| Test Cock Handles          | Stainless Steel                 |

### FACTORY CODE

| 4SG [X]           | 60 X       | X                  | [X]   | X               |
|-------------------|------------|--------------------|---|-----------------|
|                   | SIZE       | METER OPTION       | SHUT-OFF VALVES (Inlet x Outlet)                    | FLOW (OPTIONAL) |
| 4SG = Standard    | 9 = 2-1/2" | C = Cubic feet/min | 1 = Less Shut-off Valves (grooved-end body)         | N = n Flow      |
| 4SGLF = Lead Free | 0 = 3"     | E = Gallons/min    | 3 = OS&Y Flg x OS&Y Flg                             |                 |
| (2-1/2"-6" only)  | A = 4"     | G = Less meter     | 4 = OS&Y Flg x Monitored Butterfly Valve Grv        |                 |
| 4S = 10"          | C = 6"     |                    | 6 = OS&Y Flg x Flg Post Indicator**                 |                 |
|                   | E = 8"     |                    | 7 = OS&Y Flg x OS&Y Grv                             |                 |
|                   | G = 10"#   |                    | 8 = OS&Y Grv x OS&Y Grv                             |                 |
|                   |            |                    | 9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv |                 |
|                   |            |                    | 10 = OS&Y Flg x Grv Post Indicator**                |                 |

\*\*Post indicator option not available in 2-1/2" size  
# 10" body is flanged internal connections only (Model 4S)

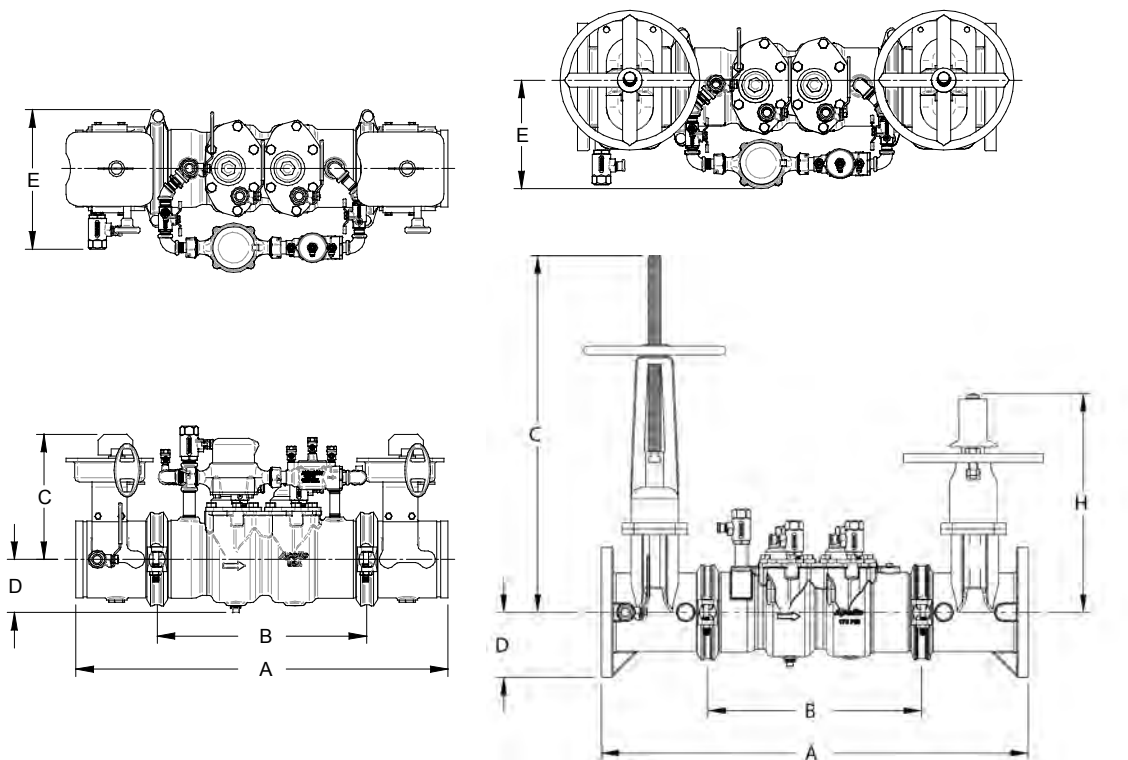
Example:

**4SG 60A E7** = 4" size Double Check Detector Assembly with meter in gpm and OS&Y flanged inlet x OS&Y grooved outlet shut-off valves

# BACKFLOW PREVENTION CATALOG

## Double Check Detector Backflow Preventers

### DCDA 4SG SERIES



### DIMENSIONS

See Page 58 For Flow Curves

| Model No.<br>Factory No.<br>Size | DC4SG212<br>4SG-109<br>2 1/2" | DC4SG212<br>4SG-109<br>65 mm. | DC4SG3<br>4SG-100<br>3" | DC4SG3<br>4SG-100<br>80 mm. | DC4SG4<br>4SG-10A<br>4" | DC4SG4<br>4SG-10A<br>100 mm. | DC4SG6<br>4SG-10C<br>6" | DC4SG6<br>4SG-10C<br>150 mm. | DC4SG8<br>4SG-10E<br>8" | DC4SG8<br>4SG-10E<br>200 mm. | DC4S10<br>4S-10G<br>10" | DC4S10<br>4S-10G<br>250 mm. |
|----------------------------------|-------------------------------|-------------------------------|-------------------------|-----------------------------|-------------------------|------------------------------|-------------------------|------------------------------|-------------------------|------------------------------|-------------------------|-----------------------------|
| A (Butterfly Valves)*            | 29                            | 737                           | 29-1/2                  | 749                         | 29-3/4                  | 756                          | 32-1/2                  | 815                          | 43                      | 1092                         | N/A                     | N/A                         |
| A (Gate Valves)*                 | 32                            | 813                           | 33                      | 838                         | 34-1/2                  | 876                          | 39                      | 991                          | 50-1/4                  | 1276                         | 55-3/4                  | 1416                        |
| B (Grooved End Body)             | 17                            | 432                           | 17                      | 432                         | 16-1/2                  | 419                          | 18                      | 457                          | 27                      | 686                          | 29-1/2                  | 750                         |
| C (Butterfly Valves)             | 8                             | 200                           | 8-1/2                   | 216                         | 9-1/4                   | 235                          | 10-1/4                  | 260                          | 12                      | 300                          | N/A                     | N/A                         |
| C (OS&Y Open)                    | 16-3/8                        | 416                           | 18-7/8                  | 479                         | 22-3/4                  | 578                          | 30-1/8                  | 765                          | 37-3/4                  | 959                          | 46                      | 1168                        |
| D (Butterfly Valves)             | 4-1/2                         | 114                           | 4-1/2                   | 114                         | 4-1/2                   | 114                          | 4-1/2                   | 114                          | 6-1/2                   | 165                          | N/A                     | N/A                         |
| D (Gate Valves)                  | 3-1/2                         | 89                            | 3-3/4                   | 95                          | 4-1/2                   | 114                          | 5-1/2                   | 140                          | 6-3/4                   | 171                          | 8.0                     | 203                         |
| E                                | 9                             | 229                           | 9                       | 229                         | 9                       | 229                          | 9                       | 229                          | 10-3/4                  | 273                          | 13.0                    | 330                         |
| H (Post Indicator Valve)         | 14.75                         | 375                           | 14.80                   | 376                         | 14.80                   | 376                          | 18.75                   | 476                          | 24.42                   | 595                          | 11-1/2                  | 292                         |
| Test Cocks (NPT)                 | 1/2                           | 1/2                           | 1/2                     | 1/2                         | 1/2                     | 1/2                          | 3/4                     | 3/4                          | 3/4                     | 3/4                          | 3/4                     | 3/4                         |
| <b>WEIGHTS</b>                   | <b>lbs.</b>                   | <b>kg.</b>                    | <b>lbs.</b>             | <b>kg.</b>                  | <b>lbs.</b>             | <b>kg.</b>                   | <b>lbs.</b>             | <b>kg.</b>                   | <b>lbs.</b>             | <b>kg.</b>                   | <b>lbs.</b>             | <b>kg.</b>                  |
| Net Wt. (Less Valves)            | 65                            | 29                            | 65                      | 29                          | 65                      | 29                           | 72                      | 33                           | 395                     | 179                          | 490                     | 222                         |
| Net Wt. (w/Butterfly Valves)     | 92                            | 42                            | 95                      | 42                          | 109                     | 49                           | 140                     | 64                           | 526                     | 239                          | N/A                     | N/A                         |
| Net Wt. (w/OS&Y Valves)          | 161                           | 73                            | 186                     | 84                          | 220                     | 100                          | 321                     | 146                          | 872                     | 397                          | 1340                    | 607                         |

\*Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances.



# BACKFLOW PREVENTION CATALOG

## Reduced Pressure Backflow Preventers

### RP 4A



Sizes 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"

### REDUCED PRESSURE PRINCIPLE

The Apollo Series RP 4A Reduced Pressure Principle Backflow Preventer is designed to give maximum protection against backflow caused by either back-pressure or back-siphonage from substances that are hazardous. The durable but economical device is easily maintained in the line with modular check cartridge assemblies that require no special tools. It consists of two independently acting spring-loaded check valves with an automatic differential relief valve located between the check valves. All testcocks are mounted at the top of the unit to assure easy access during repair and maintenance when unit is installed in tight places.

#### FEATURES

- Maximum protection against back-pressure/back-siphonage
- Modular check valve cartridges w/easily replaced parts
- Reversible/removable chloramine-resistant silicone seat discs
- Low head pressure loss
- Top mounted test cocks
- Threaded testcock protectors
- Internal sensing passage
- ASSE 1013
- CSA B64.4
- **Lead-Free** option
  - NSF 61/8/G/372
  - Federal Public Law 111-380
- AWWA C511\*
- UL Classified (less shut-offs)
- USC FCCHR \*
- Standard with Apollo® full port ball valves with stainless steel handles
- Corrosion resistant
- Maximum working pressure 175 psig
- Operating temperature range 33°F-180°F
- Horizontal installation approvals on 1/2" through 2"
- Designed, cast, manufactured, assembled and tested in South Carolina, USA
- 5 year, domestic warranty

\* Contact factory for approval details

### MATERIALS

| Part               | Material                      |
|--------------------|-------------------------------|
| Body and Covers    | Bronze (C84400, LF C89836)    |
| Springs            | 300 Series SS                 |
| Seat Discs         | Chloramine-resistant Silicone |
| Diaphragm          | Nitrile and Nylon             |
| Check Modules      | Glass-Filled PPO              |
| O-rings            | Chloramine-resistant EPDM     |
| Ball Valve Handles | Stainless Steel               |

Contact local water authorities for installation/service requirements.

### FACTORY CODE

| 4A [X]                                 | 2 X  | X  | T X   | X   |
|--|--|--|---|---|
|  | Y-STRAINER   | SIZE   | SHUT-OFF VALVES   | OPTIONS (CAN BE COMBINED)   |
| 4A = Non-Lead Free<br>4ALF = Lead Free | 0 = Standard<br>1 = With Y-Strainer<br>(Shipped loose) | 3 = 1/2"<br>4 = 3/4"<br>5 = 1"<br>6 = 1-1/4"<br>7 = 1-1/2"<br>8 = 2" | 1 = Less ball valves<br>2 = w/ball valves (Standard)<br>4 = w/union ball valves | F = SAE threaded test cocks (standard 1/2, 3/4", 1")<br>L = Lever handle (3/4" & 1" only)<br>LL = Locking lever handles (1-1/4", 1-1/2", 2")*<br>LT = Locking tee handles<br>PR = Press Connection<br>P = Push Connection |

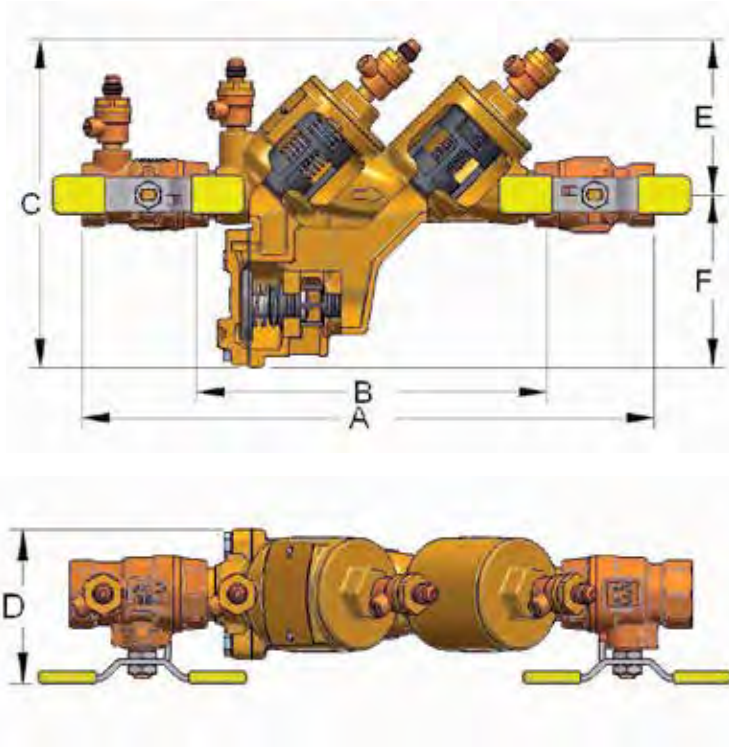
Example:

**4A 215 T4LT** = 1" Reduced Pressure Backflow Preventer with strainer, union ball valves and locking tee handles

# BACKFLOW PREVENTION CATALOG

## Reduced Pressure Backflow Preventers

### RP 4A



### DIMENSIONS

See Page 61 For Flow Curves

| Model No.<br>Factory No.<br>Size | RP4A12<br>4A 203 T2F<br>1/2" | RP4A12<br>4A 203 T2F<br>15 mm. | RP4A34<br>4A 204 T2F<br>3/4" | RP4A34<br>4A 204 T2F<br>20 mm. | RP4A1<br>4A 205 T2F<br>1" | RP4A1<br>4A 205 T2F<br>25mm. | RP4A114<br>4A 206 T2<br>1-1/4" | RP4A114<br>4A 206 T2<br>32 mm. | RP4A112<br>4A 207 T2<br>1-1/2" | RP4A112<br>4A 207 T2<br>40 mm. | RP4A2<br>4A 208 T2<br>2" | RP4A2<br>4A 208 T2<br>50 mm. |
|----------------------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|---------------------------|------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------|------------------------------|
| A*                               | 11-1/8                       | 283                            | 12-3/4                       | 324                            | 14-5/8                    | 371                          | 18-5/8                         | 473                            | 18-3/4                         | 476                            | 21-1/8                   | 537                          |
| B                                | 7-3/8                        | 187                            | 8-1/2                        | 216                            | 9-1/2                     | 241                          | 11-3/4                         | 298                            | 11-5/8                         | 295                            | 12-3/4                   | 324                          |
| C                                | 7-1/8                        | 181                            | 7-3/8                        | 187                            | 8                         | 203                          | 9-7/8                          | 251                            | 9-7/8                          | 251                            | 11                       | 279                          |
| D                                | 2-7/8                        | 73                             | 3-1/8                        | 79                             | 3-1/4                     | 83                           | 5-1/8                          | 130                            | 5-1/8                          | 130                            | 5-7/8                    | 149                          |
| E                                | 3-1/4                        | 83                             | 3-1/2                        | 89                             | 4                         | 100                          | 4-1/2                          | 114                            | 4-1/2                          | 114                            | 5                        | 127                          |
| F                                | 3-7/8                        | 98                             | 3-7/8                        | 98                             | 4                         | 100                          | 5-3/8                          | 137                            | 5-3/8                          | 137                            | 6                        | 150                          |
| <b>WEIGHTS</b>                   | <b>lbs.</b>                  | <b>kg.</b>                     | <b>lbs.</b>                  | <b>kg.</b>                     | <b>lbs.</b>               | <b>kg.</b>                   | <b>lbs.</b>                    | <b>kg.</b>                     | <b>lbs.</b>                    | <b>kg.</b>                     | <b>lbs.</b>              | <b>kg.</b>                   |
| Net Wt.                          | 7.2                          | 3.3                            | 8.8                          | 4.0                            | 12.6                      | 5.7                          | 18.5                           | 8.4                            | 21.5                           | 9.8                            | 33.4                     | 15.1                         |

\* For Union Ball Valve, Press, and Push connection dimensions, see submittal sheets.

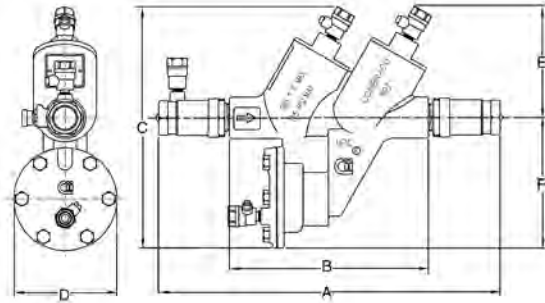
# BACKFLOW PREVENTION CATALOG

## Reduced Pressure Backflow Preventers

### RP 40S SERIES



Sizes 1/4", 3/8", 1/2", 3/4", 1"



See page 52 for air gap drain information.

### STAINLESS STEEL REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER

The Apollo Series RP 40S Stainless Steel Reduced Pressure Principle Backflow Preventer is designed to give maximum protection against backflow caused by either backpressure or back-siphonage from a cross-connection wherein a contaminant hazard exists (i.e. a health hazard), or a pollutant hazard exists (i.e. a non-hazard). The assembly is composed of two spring-loaded poppet type check valves and a mechanically independent, hydraulically dependent pressure differential relief valve set in an integral stainless steel body. Three of the testcocks are mounted at the top to assure easy access during repair and maintenance when unit is installed in tight places.

#### OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. The relief valve is held shut by supply pressure acting through the internal sensing passage, on the relief valve diaphragm. In the area between the check valves, called the zone, the pressure is maintained at approximately 7 psi lower than supply pressure. Should a back-pressure or back-siphonage condition occur, the second check valve will seal, prohibiting the backflow of water. Should the second check valve become fouled, the pressure in the zone will increase causing the differential relief valve to open to atmosphere. This will maintain the pressure in the zone at least 2 psi lower than supply pressure.

#### FEATURES

- Stainless steel body and covers
- Easy to install and repair
- Internal sensing passage
- Low head loss
- Reversible/Removable seat discs
- Replaceable seats
- Comes standard with Apollo® stainless steel full port ball valves with stainless steel handles
- **Lead-Free** standard
- Maximum working pressure 175 psig
- Temperature range 33°F-180°F
- USC FCCCHR
- ASSE 1013
- CSA
- Designed, cast, manufactured, assembled and tested in South Carolina, USA
- 5 year, domestic warranty

#### MATERIALS

| Part                  | Material             |
|-----------------------|----------------------|
| Body and Covers       | Stainless Steel      |
| Springs               | Stainless Steel      |
| Fasteners             | Stainless Steel      |
| Poppets               | Glass-Filled Celcon® |
| Seat Discs            | Silicone Rubber      |
| Diaphragm and O-Rings | FDA Fluorocarbon     |
| Replaceable Seats     | Glass-Filled PPO     |
| Test Cocks & Handles  | Stainless Steel      |

Contact local water authorities for installation/service requirements.

#### FACTORY CODE

| 40 2 X   | X  | T X   | S X                        |
|--|--|---|----------------------------|
| Y-STRAINER   | SIZE   | SHUT-OFF VALVES   | OPTIONS (CAN BE COMBINED)  |
| 0 = Standard<br>1 = w/ SS Y-strainer (shipped loose) | 1 = 1/4"<br>2 = 3/8"<br>3 = 1/2"<br>4 = 3/4"<br>5 = 1" | 1 = Less ball valves (UL classified-3/4",1")<br>2 = w/SS ball valves, w/SS Tee Handles (Standard) | LL = Locking lever handles |

#### DIMENSIONS

(x = Shut-off valve configuration)

See Page 62 For Flow Curves

| Model No.<br>Factory No.<br>Size | RP40S14<br>40 201 TxS<br>1/4" | RP40S14<br>40 201 TxS<br>6 mm. | RP40S38<br>40 202 TxS<br>3/8" | RP40S38<br>40 202 TxS<br>10 mm. | RP40S12<br>40 203 TxS<br>1/2" | RP40S12<br>40 203 TxS<br>12 mm. | RP40S34<br>40 204 TxS<br>3/4" | RP40S34<br>40 204 TxS<br>20 mm. | RP40S1<br>40 205 TxS<br>1" | RP40S1<br>40 205 TxS<br>25 mm. |
|----------------------------------|-------------------------------|--------------------------------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|----------------------------|--------------------------------|
| A                                | 10-1/2                        | 267                            | 10-1/2                        | 267                             | 10-1/2                        | 267                             | 13-1/2                        | 343                             | 15-1/4                     | 387                            |
| B                                | 5-3/4                         | 146                            | 5-3/4                         | 146                             | 5-3/4                         | 146                             | 7-15/16                       | 202                             | 7-15/16                    | 202                            |
| C                                | 6-7/8                         | 175                            | 6-7/8                         | 175                             | 6-7/8                         | 175                             | 9                             | 229                             | 9                          | 229                            |
| D                                | 2-5/8                         | 68                             | 2-5/8                         | 68                              | 2-5/8                         | 68                              | 4-1/16                        | 103                             | 4-1/16                     | 103                            |
| E                                | 3-3/16                        | 81                             | 3-3/16                        | 81                              | 3-3/16                        | 81                              | 4-3/8                         | 111                             | 4-3/8                      | 111                            |
| F                                | 3-3/4                         | 95                             | 3-3/4                         | 95                              | 3-3/4                         | 95                              | 5-1/8                         | 130                             | 5-1/8                      | 130                            |
| Test Cocks                       | 1/8 x 1/4 NPT                 | 1/8 x 1/4 NPT                  | 1/8 x 1/4 NPT                 | 1/8 x 1/4 NPT                   | 1/8 x 1/4 NPT                 | 1/8 x 1/4 NPT                   | 1/8 x 1/4 NPT                 | 1/8 x 1/4 NPT                   | 1/8 x 1/4 NPT              | 1/8 x 1/4 NPT                  |
| WEIGHTS                          | lbs.                          | kg.                            | lbs.                          | kg.                             | lbs.                          | kg.                             | lbs.                          | kg.                             | lbs.                       | kg.                            |
| Net Wt. (w/o Ball Valves)        | 4.3                           | 2.0                            | 4.3                           | 2.0                             | 4.1                           | 1.9                             | 8.1                           | 3.8                             | 8.1                        | 3.7                            |
| Net Wt. (with Ball Valves)       | 5.5                           | 2.5                            | 5.5                           | 2.5                             | 5.4                           | 2.4                             | 10.8                          | 4.9                             | 11                         | 5.0                            |
| Shpg. Wt. (w/o Ball Valves)      | 5.2                           | 2.4                            | 5.1                           | 2.3                             | 5                             | 2.3                             | 9.8                           | 4.4                             | 9.6                        | 4.3                            |
| Shpg. Wt. (with Ball Valves)     | 6.4                           | 2.9                            | 6.4                           | 2.9                             | 6.3                           | 2.8                             | 12.3                          | 5.6                             | 12.8                       | 5.8                            |

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# BACKFLOW PREVENTION CATALOG

## Reduced Pressure Backflow Preventers

### RPFHB 4A SERIES



Size 1"

Contact local water authorities for installation/service requirements.

### FIRE HYDRANT BACKFLOW METER

The Apollo Series RP 4A Fire Hydrant Backflow Meter shall measure potable water flow from a fire hydrant or other non-permanent installation. At the same time it shall protect against backflow by either back-pressure or back-siphonage from a cross-connection between potable water system and substances that are non-health and health hazards. The unit shall consist of a 3/4" Short Water Meter, 1" 4A-205 RP device, 1" resilient-seated full port ball valve with locking device, 2 1/2"-7 1/2" NST threaded hose couplings, strainer on inlet of meter and adjustable support rod assembly.

#### OPERATION

The Fire Hydrant Backflow Meter is connected directly to a fire hydrant with a 2 1/2"-7 1/2" NST fire hose female swivel coupling. The device operates like a standard Reduced Pressure device except the flow through the device is measured by a Water Meter connected to the inlet of the backflow preventer. Support rod assembly is adjustable to accommodate fire hydrants at different heights from the ground.

#### FEATURES

- Normal operating flow range 2-30 gpm
- Accuracy 100%  $\pm$  1.5% of actual thruput
- Low flow registration 95% at 1/2 gpm
- Maximum pressure loss 11.0 psi at 30 gpm
- Maximum operating pressure 150 psi
- Measuring element oscillating piston
- Register is straight reading, hermetically sealed magnetic drive
- Meter maincase is bronze, measuring chamber is Rocksyn, a corrosion resistant thermoplastic material, maincase bottom plate is bronze, gears are self-lubricating, molded plastic for long life and minimum friction, magnets are Alnico, trim and casing bolts are stainless steel and strainer is thermoplastic.
- Tamperproof locking system inside the meter
- 2 1/2"-7 1/2" NST fire hose swivel couplings, female inlet, male outlet
- Maximum rate listed is for intermittent flow only. Maximum continuous flow rate as specified by AWWA is 15 gpm.
- Designed, manufactured, assembled and tested in South Carolina, USA
- 5 year, domestic warranty

| WEIGHTS (lbs.)  |                    |
|-----------------|--------------------|
| NET WEIGHT      | 24.1               |
| SHIPPING WEIGHT | 27.6               |
| MODEL NUMBER    |                    |
| 4A-205-FHB      | (meter in cu. ft.) |
| 4A-205-FHBG     | (meter in gallons) |

# BACKFLOW PREVENTION CATALOG

## Reduced Pressure Backflow Preventers

### RP 4ALF SERIES



Sizes 2-1/2"-12"



TriForce™ Check

### REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER

The Apollo® MODEL RP 4ALF Reduced Pressure Principle Backflow Preventers consist of two independently acting, TriForce™ center stem guided check valves with a differential pressure relief valve located between the check valves. The unit is designed to give maximum protection against backflow of health or non-health hazard fluids by either back-pressure or back-siphonage. The durable domestic stainless steel units (2-1/2"-8") and the FDA epoxy coated ductile iron units (10" and 12") are easily maintained in the line without any special tools. The TriForce™ check valves operate with a spring assist in the flowing condition to provide excellent flow rates which are documented by ASSE or USC FCCC&HR approval curves.

#### OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. The relief valve is held shut by supply pressure acting through the sensing tube on the relief valve diaphragm. In the area between the check valves, called the zone, the pressure is maintained approximately 7 psi lower than supply pressure. Should a back-pressure or back-siphonage condition occur, the second check valve will seal, prohibiting the backflow of water. Should the second check become fouled, the pressure in the zone will increase causing the differential relief valve to open to atmosphere. This will maintain the pressure in the zone at least 2 psi lower than supply pressure.

#### FEATURES

- Domestic Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance - no special tools required
- Snap-in check retainers: 2-1/2"-6"
- Bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCCC&HR backflow preventer approval agencies
- Center stem guided TriForce™ check valves
- Approved for horizontal flow\*
- Chloramine-resistant elastomers
- Made in the USA
- **Lead-Free** standard
- USC FCC & HR†
- ASSE 1013
- CSA B64.4
- AWWA C-511†
- UL, ULC Classified
- FM approved
- Maximum working pressure 175 psi
- Temperature range 33°F - 140°F, 180°F intermittent
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Optional Air Gap Drains (see page 52 for details and discharge rates)
- 5 year, domestic warranty

\* Contact factory for approval details

#### MATERIALS

| Part               | Material                      |
|--------------------|-------------------------------|
| Body (2-1/2"-8")   | 304 Stainless Steel           |
| Body (10 & 12")    | FDA Epoxy Coated Ductile Iron |
| Covers (2-1/2"-6") | Glass Filled PPO/SS           |
| Covers (8")        | 304 Stainless Steel           |
| Covers (10 & 12")  | FDA Epoxy Coated Ductile Iron |
| Relief Valve       | Bronze C84400/ LF C89836      |
| Check Valves       | Bronze/Glass-filled PPO/SS    |
| Springs            | Stainless Steel               |
| Seat Discs         | Chloramine-resistant Silicone |

#### FACTORY CODE

| 4ALF                      | 2 X   | X  | 0 X  |
|---------------------------|---|--|--|
|                           | Y-STRAINER  | SIZE   | SHUT-OFF VALVES  |
| 4ALF = Lead Free Standard | 0 = Standard<br>1 = w/ Y-strainer (shipped loose) | 9 = 2-1/2"<br>0 = 3"<br>A = 4"<br>C = 6"<br>E = 8"<br>G = 10"<br>H = 12" | 1 = Less Shut-off Valves<br>2 = NRS Flg x NRS Flg<br>3 = OS&Y Flg x OS&Y Flg<br>4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv†<br>6 = OS&Y Flg x Post indicator Flg**<br>7 = OS&Y Flg x OS&Y Grv<br>8 = OS&Y Grv x OS&Y Grv<br>9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv†<br>10 = OS&Y Flg x Post Indicator Grv**<br>11 = NRS Grv x NRS Grv<br>12 = NRS Flg x NRS Grv<br>13 = Post Indicator Flg x Mon. Butterfly Vlv Grv†<br>14 = Post Indicator Flg x Post Indicator Flg<br>16 = Mon Butterfly Vlv Grv x Post Indicator Flg†<br>17 = Post Indicator Flg x OS&Y Grv<br>18 = OS&Y Grv x Post Indicator Grv<br>19 = Mon. Butterfly Vlv Grv x Post Indicator Grv<br>20 = Post Indicator Flg x OS&Y Flg |

\*\* Post indicator with plate & nut option not available in 2-1/2" size.

† Butterfly valves not available in 12" size.

Example:

**4ALF 20A 07** = 4" size Lead Free Reduced Pressure Assembly with OS&Y flanged inlet x OS&Y grooved outlet shut-off valves.

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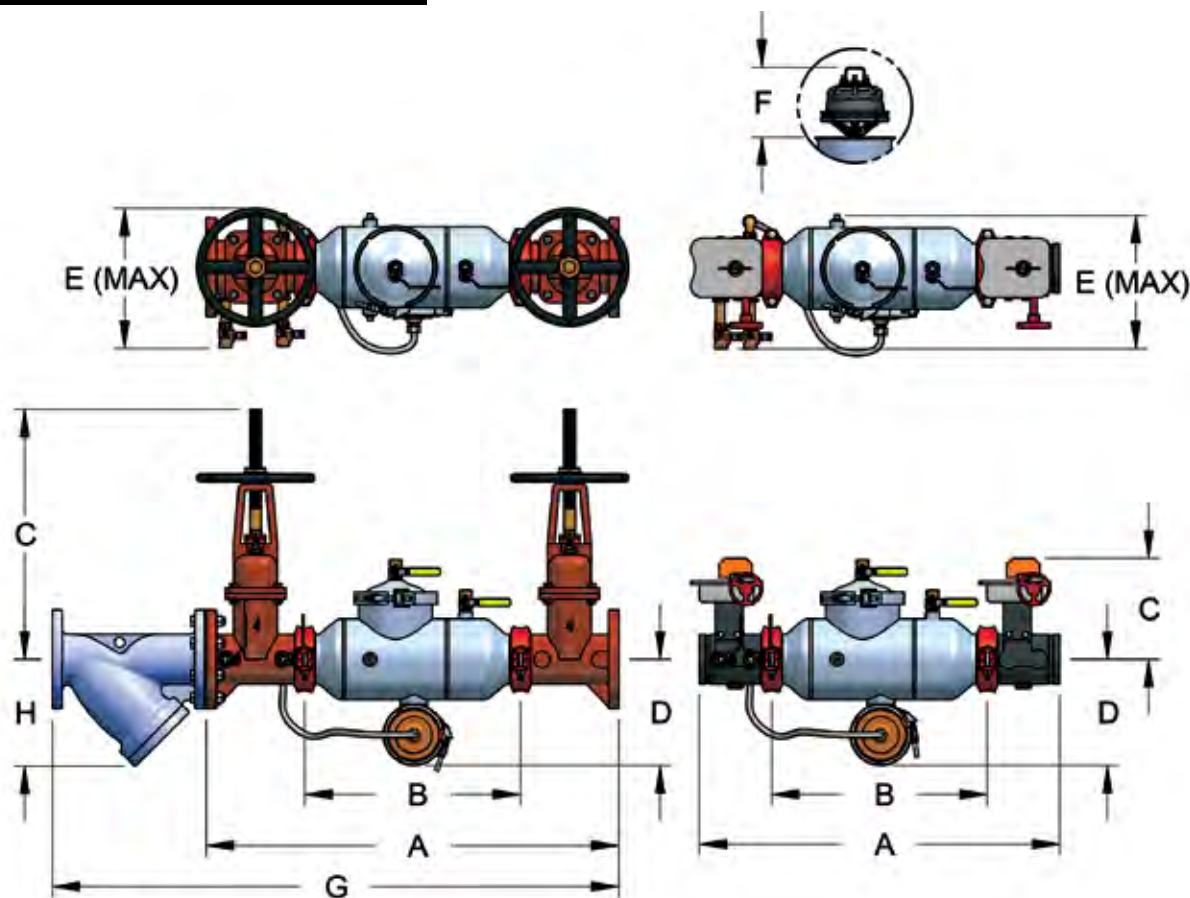
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# BACKFLOW PREVENTION CATALOG

## Reduced Pressure Backflow Preventers

### RP 4A SERIES



### DIMENSIONS

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ( $\pm 1/8"$  (3 mm) per joint)

See Page 63 For Flow Curves

| DIMENSIONS                    | 2-1/2"     | 60 mm.    | 3"         | 75 mm.    | 4"         | 100 mm.   | 6"         | 150 mm.   | 8"         | 200 mm.   | 10"        | 250 mm.   | 12"        | 300 mm.   |
|-------------------------------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|
| A (Butterfly Valves)          | 28         | 711 ±     | 28-1/2 ±   | 724 ±     | 33-1/4 ±   | 845 ±     | 38-7/8 ±   | 987 ±     | 46-3/8 ±   | 1178 ±    | 52-1/4 ±   | 1327 ±    | N/A        | N/A       |
| A (Gate Valves)               | 31 ±       | 787 ±     | 32 ±       | 813 ±     | 38 ±       | 965 ±     | 45-7/8 ±   | 1165 ±    | 53-3/8 ±   | 1356 ±    | 62-1/4 ±   | 1581 ±    | 62-1/2 ±   | 1586 ±    |
| B (Less Shut-off Valves)      | 15-7/8 ±   | 403 ±     | 15-7/8 ±   | 403 ±     | 19-5/8 ±   | 498 ±     | 24-1/2 ±   | 622 ±     | 30 ±       | 762 ±     | 36 ±       | 914 ±     | 37 ±       | 940 ±     |
| C (Butterfly Valves)          | 8          | 203       | 8-3/8      | 213       | 9-1/8      | 233       | 10-1/8     | 257       | 12         | 306       | 13-3/8     | 340       | N/A        | N/A       |
| C (NRS/PI Gate Valves)        | 11-3/8     | 289       | 12-3/8     | 314       | 14-3/4     | 375       | 19         | 483       | 22-1/2     | 572       | 26-1/2     | 673       | 30         | 762       |
| C (OS&Y Open)                 | 16-3/8     | 416       | 18-7/8     | 479       | 22-3/4     | 578       | 30-1/8     | 765       | 37-3/4     | 959       | 45-3/4     | 1162      | 53-1/8     | 1349      |
| D (Centerline to bottom)      | 9-5/8      | 238       | 9-5/8      | 238       | 10-3/8     | 264       | 11-5/8     | 295       | 15-5/8     | 397       | 21         | 533       | 21         | 533       |
| E (Width Max)                 | 11-1/2     | 292       | 12         | 305       | 12-1/2     | 318       | 14-3/8     | 365       | 17-5/8     | 449       | 21         | 533       | 22         | 559       |
| F (Check Removal Clearance)   | 4-3/4      | 121       | 4-3/4      | 121       | 6-1/2      | 165       | 7-1/2      | 191       | 7-1/2      | 191       | 10         | 254       | 10         | 254       |
| G (With Strainer)             | 41-7/8     | 1064      | 43-5/8     | 1108      | 52         | 1321      | 64-1/2     | 1638      | 74-7/8     | 1902      | 88-3/8     | 2245      | 95-5/8     | 2429      |
| H (Strainer Clearance)        | 8          | 203       | 8-3/4      | 222       | 9-1/2      | 241       | 12-5/8     | 321       | 16-3/8     | 416       | 19         | 483       | 22         | 559       |
| Test Cocks (NPT)              | 1/2"       | 15        | 1/2"       | 15        | 1/2"       | 15        | 3/4"       | 20        | 3/4"       | 20        | 3/4"       | 20        | 3/4"       | 20        |
| <b>WEIGHTS</b>                | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> |
| Net Wt. (Less Shut-offs)      | 31         | 14        | 32         | 5         | 48         | 22        | 84         | 38        | 228        | 103       | 762        | 346       | 865        | 392       |
| Net Wt. (w/ Butterfly Valves) | 58         | 26        | 62         | 28        | 92         | 42        | 152        | 69        | 359        | 163       | 980        | 445       | N/A        | N/A       |
| Net Wt. (w/NRS Gate Valves)   | 117        | 53        | 143        | 65        | 197        | 89        | 323        | 147       | 691        | 313       | 1608       | 729       | 2003       | 909       |
| Net Wt. (w/ OS&Y Gate Valves) | 127        | 58        | 153        | 69        | 203        | 92        | 333        | 151       | 705        | 320       | 1648       | 748       | 2057       | 933       |

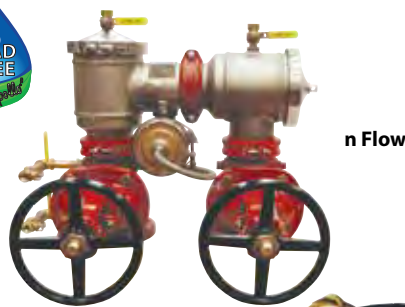
#### Notes:

1. Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances (1/8" per joint).
2. Internal body connections are grooved on 2 1/2" – 10" sizes.
3. Internal body connections are flanged on 12" size.
4. Strainer option only available for flanged-end shut-off options.

# BACKFLOW PREVENTION CATALOG

## Reduced Pressure Backflow Preventers

### RP 4AnLF SERIES



n Flow

Vertical Up Flow

Sizes 2-1/2"-12"



TriForce™ Check



Optional Valve Setter (see pg 50)

### REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER

The Apollo® MODEL RP 4ANLF Reduced Pressure Principle Backflow Preventer consists of two independently acting, TriForce™ center stem guided check valves with a differential pressure relief valve located between the check valves. The unit is designed to give maximum protection against backflow of health or non-health hazard fluids by either back-pressure or back-siphonage. The normally vertical up/vertical down oriented body incorporates an internal swivel connection providing the ability to pivot the second check 180° to a vertical up/vertical up flow. The durable domestic stainless steel units (2-1/2" to 8") and the FDA epoxy coated ductile iron units (10" and 12") are easily maintained in the line without any special tools. The TriForce™ check valves operate with a spring assist in the flowing condition to provide excellent flow rates which are documented by ASSE or USC FCCC&HR approval curves.

#### OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. The relief valve is held shut by supply pressure acting through the sensing tube on the relief valve diaphragm. In the area between the check valves, called the zone, the pressure is maintained approximately 7 psi lower than supply pressure. Should a back-pressure or back-siphonage condition occur, the second check valve will seal, prohibiting the backflow of water. Should the second check become fouled, the pressure in the zone will increase causing the differential relief valve to open to atmosphere. This will maintain the pressure in the zone at least 2 psi lower than supply pressure.

#### FEATURES

- Domestic Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance - no special tools required
- Drop-in check retainers: 2-1/2"-6"
- Bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCCC&HR backflow preventer approval agencies
- Center stem guided TriForce™ check valves
- Optional Air Gap Drains (see page 52 for details and discharge rates)
- Small installation space required - small footprint
- Approved for n-flow and vertical up flow\*
- Chloramine-resistant elastomers
- **Lead-Free** standard
- USC FCC & HR\*
- ASSE 1013
- CSA B64.4
- UL, ULC Classified
- FM approved
- Maximum working pressure 175 psi
- Temperature range 33°F - 140°F, 180°F intermittent
- Optional valve setters eliminate need for thrust blocks between elbows
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Made in the USA
- 5 year, domestic warranty

\* Contact factory for approval details

#### MATERIALS

| Part               | Material                      |
|--------------------|-------------------------------|
| Body (2-1/2"-8")   | 304 Stainless Steel           |
| Body (10 & 12")    | FDA Epoxy Coated Ductile Iron |
| Covers (2-1/2"-6") | Glass Filled PPO/SS           |
| Covers (8")        | 304 Stainless Steel           |
| Covers (10 & 12")  | FDA Epoxy Coated Ductile Iron |
| Relief Valve       | Bronze C84400/ LF C89836      |
| Check Valves       | Bronze/Glass-filled PPO/SS    |
| Springs            | Stainless Steel               |
| Seat Discs         | Chloramine-resistant Silicone |

#### FACTORY CODE

| 4AnLF            | 2 X   | X  | 0 X  |
|------------------|---|--|--|
|                  | <b>Y-STRAINER</b>                                 | <b>SIZE</b>  | <b>SHUT-OFF VALVES</b>   |
| 4AnLF= Lead Free | 0 = Standard<br>1 = w/ Y-strainer (shipped loose) | 9 = 2-1/2"<br>0 = 3"<br>A = 4"<br>C = 6"<br>E = 8"<br>G = 10"<br>H = 12" | 1 = Less Shut-off Valves<br>2 = NRS Flg x NRS Flg<br>3 = OS&Y Flg x OS&Y Flg<br>4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv†<br>6 = OS&Y Flg x Post indicator Flg**<br>7 = OS&Y Flg x OS&Y Grv<br>8 = OS&Y Grv x OS&Y Grv<br>9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv†<br>10 = OS&Y Flg x Post Indicator Grv**<br>11 = NRS Grv x NRS Grv<br>12 = NRS Flg x NRS Grv<br>13 = Post Indicator Flg x Mon. Butterfly Vlv Grv†<br>14 = Post Indicator Flg x Post Indicator Flg<br>16 = Mon Butterfly Vlv Grv x Post Indicator Flg†<br>17 = Post Indicator Flg x OS&Y Grv<br>18 = OS&Y Grv x Post Indicator Grv<br>19 = Mon. Butterfly Vlv Grv x Post Indicator Grv<br>20 = Post Indicator Flg x OS&Y Flg |

\*\* Post indicator with plate & nut option not available in 2-1/2" size.

† Butterfly valves not available in 12" size.

Example:

**4AN 20A 07** = 4" size Reduced Pressure Assembly with OS&Y flanged inlet x OS&Y grooved outlet shut-off valves

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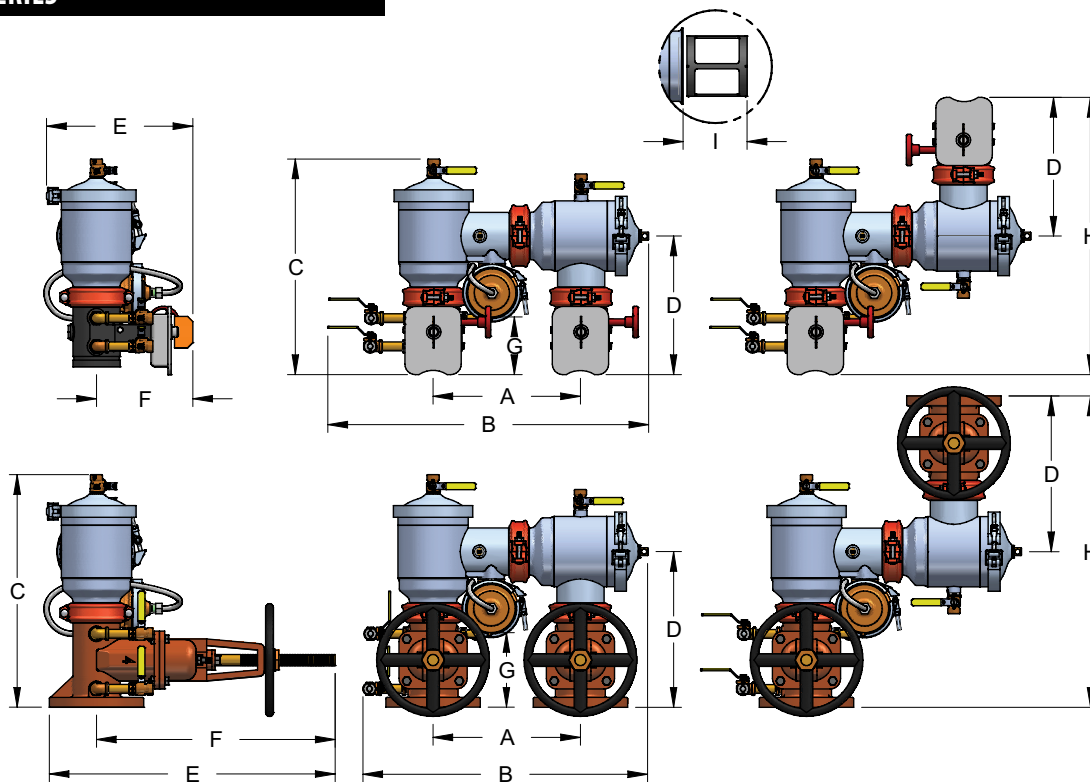




# BACKFLOW PREVENTION CATALOG

## Reduced Pressure Backflow Preventers

### RP 4AnLF SERIES



### DIMENSIONS

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ( $\pm 1/8"$  (3 mm) per joint)

See Page 64 For Flow Curves

| DIMENSIONS                    | 2-1/2"       | 60mm      | 3"           | 75mm      | 4"           | 100mm     | 6"         | 150mm     | 8"           | 200mm      | 10"        | 250mm      | 12"          | 300mm      |
|-------------------------------|--------------|-----------|--------------|-----------|--------------|-----------|------------|-----------|--------------|------------|------------|------------|--------------|------------|
| A (Centerline to Centerline)  | 12-1/2 $\pm$ | 318 $\pm$ | 12-1/2 $\pm$ | 318 $\pm$ | 14 $\pm$     | 356 $\pm$ | 16 $\pm$   | 406 $\pm$ | 18-1/2 $\pm$ | 470 $\pm$  | 21 $\pm$   | 533 $\pm$  | 26-3/4 $\pm$ | 675 $\pm$  |
| B (Butterfly Valves)          | 27-1/2 $\pm$ | 699 $\pm$ | 27-1/2 $\pm$ | 699 $\pm$ | 30-3/4 $\pm$ | 781 $\pm$ | 36 $\pm$   | 914 $\pm$ | 37-3/8 $\pm$ | 949 $\pm$  | 43 $\pm$   | 1092 $\pm$ | N/A          | N/A        |
| B (Gate Valves)               | 24-1/2 $\pm$ | 622 $\pm$ | 24-1/2 $\pm$ | 622 $\pm$ | 27 $\pm$     | 686 $\pm$ | 32 $\pm$   | 813 $\pm$ | 40-3/4 $\pm$ | 1035 $\pm$ | 49 $\pm$   | 1245 $\pm$ | 55-3/4 $\pm$ | 1416 $\pm$ |
| C (Butterfly Valves)          | 18-1/4       | 468       | 18-1/2       | 470       | 20           | 508       | 24-3/4     | 629       | 28-1/2       | 724        | 35         | 889        | N/A          | N/A        |
| C (Gate Valves)               | 19-5/8       | 498       | 20           | 508       | 22-1/2       | 572       | 27-3/4     | 705       | 32-1/8       | 816        | 40         | 1016       | 44           | 1118       |
| D (Butterfly Valves)          | 11-1/2       | 292       | 11-3/4       | 298       | 12-1/2       | 318       | 14-1/2     | 368       | 17-7/8       | 454        | 19-3/4     | 502        | N/A          | N/A        |
| D (Gate Valves)               | 13           | 330       | 13-1/2       | 343       | 14-7/8       | 378       | 18         | 457       | 21-3/8       | 543        | 24-3/4     | 629        | 28-3/4       | 730        |
| E (Butterfly Valves)          | 11-1/2       | 292       | 12-1/8       | 308       | 12-7/8       | 327       | 15-7/8     | 403       | 22-1/4       | 565        | 23-1/8     | 587        | N/A          | N/A        |
| E (OS&Y Open)                 | 19-7/8       | 505       | 24-1/2       | 622       | 27-1/4       | 692       | 32-3/4     | 832       | 44-1/2       | 1130       | 54         | 1372       | 62-3/4       | 1594       |
| E (NRS/PI)                    | 14-7/8       | 378       | 16-1/8       | 410       | 19-1/4       | 489       | 24-1/2     | 622       | 29-1/4       | 740        | 36-3/8     | 924        | 40           | 1016       |
| F (Butterfly Valves)          | 8            | 203       | 8-3/8        | 213       | 9            | 229       | 10-7/8     | 277       | 12-7/8       | 327        | 13-1/2     | 343        | N/A          | N/A        |
| F (OS&Y Open)                 | 16-3/8       | 416       | 20-1/2       | 521       | 22-3/4       | 578       | 28         | 711       | 37-3/4       | 959        | 46         | 1168       | 53-1/8       | 1349       |
| F (NRS/PI)                    | 11-3/8       | 289       | 12-3/8       | 314       | 14-3/4       | 375       | 19         | 483       | 22-1/2       | 572        | 26-1/2     | 673        | 30           | 762        |
| G (Butterfly Valves)          | 4-1/8        | 105       | 4-1/2        | 114       | 4-3/8        | 111       | 6-1/2      | 165       | 5-1/4        | 133        | 4          | 102        | N/A          | N/A        |
| G (Gate Valves)               | 5-1/2        | 140       | 6            | 152       | 6            | 152       | 9          | 229       | 9            | 229        | 9          | 229        | 10           | 254        |
| H (Butterfly Valves)          | 23           | 584       | 23-1/2       | 597       | 25           | 635       | 29         | 737       | 35-3/4       | 908        | N/A        | N/A        | N/A          | N/A        |
| H (Gate Valves)               | 26           | 660       | 27           | 686       | 29-3/4       | 756       | 36         | 914       | 42-3/4       | 1086       | N/A        | N/A        | N/A          | N/A        |
| I (Check Removal Clearance)   | 6            | 152       | 6            | 152       | 6            | 152       | 8          | 203       | 8-1/2        | 216        | 12         | 305        | 12           | 305        |
| Test Cocks (NPT)              | 1/2"         | 15        | 1/2"         | 15        | 1/2"         | 15        | 3/4"       | 20        | 3/4"         | 20         | 3/4"       | 20         | 3/4"         | 20         |
| <b>WEIGHTS</b>                | <b>lb.</b>   | <b>kg</b> | <b>lb.</b>   | <b>kg</b> | <b>lb.</b>   | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b>   | <b>kg</b>  | <b>lb.</b> | <b>kg</b>  | <b>lb.</b>   | <b>kg</b>  |
| Net Wt. (Less Shut-offs)      | 39           | 18        | 39           | 18        | 48           | 22        | 83         | 38        | 325          | 147        | 841        | 381        | 966          | 438        |
| Net Wt. (w/ Butterfly Valves) | 66           | 30        | 69           | 31        | 92           | 42        | 151        | 69        | 456          | 207        | 1019       | 462        | N/A          | N/A        |
| Net Wt. (w/ NRS Gate Valves)  | 125          | 57        | 150          | 68        | 197          | 89        | 322        | 146       | 788          | 357        | 1487       | 674        | 2103         | 954        |
| Net Wt. (w/ OS&Y Gate Valves) | 135          | 61        | 160          | 73        | 203          | 92        | 332        | 151       | 802          | 364        | 1509       | 684        | 2157         | 978        |

#### Notes:

1. Internal body connections are grooved on 2-1/2"-10" sizes.
2. Internal body connections are flanged on 12" size.



For additional information, submittal sheets and manuals, visit [www.apollovalves.com](http://www.apollovalves.com)

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# BACKFLOW PREVENTION CATALOG

## Reduced Pressure Detector Assembly

### RPDA 4ALF SERIES



Type 2 Bypass (Standard)



Sizes 2-1/2"-12"



TriForce™ Check

### RPDA 4ALF REDUCED PRESSURE DETECTOR ASSEMBLY

The Apollo® MODEL RPDA 4ALF Reduced Pressure Detector Assembly consists of two independently acting, TriForce™ center stem guided check valves with a differential pressure relief valve located between the check valves. The unit is designed to give maximum protection against backflow of health or non-health hazard fluids by either back-pressure or back-siphonage and at the same time detect leakage or unauthorized use of water from fire or automatic sprinkler systems. The durable domestic stainless steel units (2-1/2" to 8") and the FDA epoxy coated ductile iron units (10" and 12") are easily maintained in line without any special tools. The TriForce™ check valves operate with a spring assist in the flowing condition to provide low flow rates which are documented by ASSA or USC FCCC&HR approval curves.

The Type 2 bypass uses the first check of the mainline assembly as the first check of the bypass. The second check of the bypass is a single check valve with a model number and serial number for test recording. This arrangement is approved by the Tenth Edition of the USC FCC&HR Manual of Cross Connection Control as well as ASSE. The arrangement provides the same level of protection as the original (still optional) Type 1 bypass and the testing procedure is the same.

#### FEATURES

- Domestic Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance - no special tools required
- Snap-in check retainers: 2-1/2"-6"
- Bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCCC&HR backflow preventer approval agencies
- Center stem guided TriForce™ check valves
- Approved for horizontal flow
- ASSE 1047
- Optional air gap drains (see page 52 for details and discharge rates.)
- **Lead-Free** standard
- USC FCC & HR\*
- CSA B64.4
- UL, ULC Classified
- FM approved\*
- Maximum working pressure 175 psi
- Temperature range 33°F - 140°F, 180°F intermittent
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Made in the USA
- 5 year, domestic warranty
- Optional mounting of bypass on either side for ease of installation

\* Contact factory for approval details

#### MATERIALS

| Part               | Material                      |
|--------------------|-------------------------------|
| Body (2-1/2"-8")   | 304 Stainless Steel           |
| Body (10 & 12")    | FDA Epoxy Coated Ductile Iron |
| Covers (2-1/2"-6") | Glass Filled PPO/SS           |
| Covers (8")        | 304 Stainless Steel           |
| Covers (10 & 12")  | FDA Epoxy Coated Ductile Iron |
| Relief Valve       | Bronze (C84400/LF C89836)     |
| Check Valves       | Bronze/Glass-filled PPO/SS    |
| Springs            | Stainless Steel               |
| Seat Discs         | Chloramine-resistant Silicone |

#### FACTORY CODE

| 4ALF                      | 7 X   | X  | X   | [X]   |
|---------------------------|---|--|---|---|
|                           | BY-PASS SUB-ASSEMBLY OPTIONS  | SIZE   | METER OPTION  | SHUT-OFF VALVES (Inlet x Outlet)  |
| 4ALF = Lead Free Standard | 0 = Type 1 w/ 1/2" Reduced Pressure<br>2 = Type 2 w/ 1/2" Single Check (Standard)<br>3 = Type 1 w/ bypass on left*<br>4 = Type 2 w/ bypass on left* | 9 = 2-1/2"<br>0 = 3"<br>A = 4"<br>C = 6"<br>E = 8"<br>G = 10"<br>H = 12" | C = Cubic feet/min<br>E = Gallons/min<br>G = Less meter | 1 = Less Shut-off Valves<br>3 = OS&Y Flg x OS&Y Flg<br>4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv†<br>6 = OS&Y Flg x Post indicator Flg**<br>7 = OS&Y Flg x OS&Y Grv<br>8 = OS&Y Grv x OS&Y Grv<br>9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv†<br>10 = OS&Y Flg x Post Indicator Grv**<br>13 = Post Indicator Flg x Mon. Butterfly Vlv Grv†<br>14 = Post Indicator Flg x Post Indicator Flg<br>16 = Mon Butterfly Vlv Grv x Post Indicator Flg†<br>17 = Post Indicator Flg x OS&Y Grv<br>18 = OS&Y Grv x Post Indicator Grv<br>19 = Mon. Butterfly Vlv Grv x Post Indicator Grv<br>20 = Post Indicator Flg x OS&Y Flg |

Example:

**4ALF 72AE3** = 4" size Lead Free Reduced Pressure Detector Assembly with OS&Y flanged inlet x OS&Y flanged outlet shut-off valves Type 2 Bypass w/ meter in gallons

\* Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side

\*\* Post indicator with plate & nut option not available in 2-1/2" size.

† Butterfly valves not available in 12" size.

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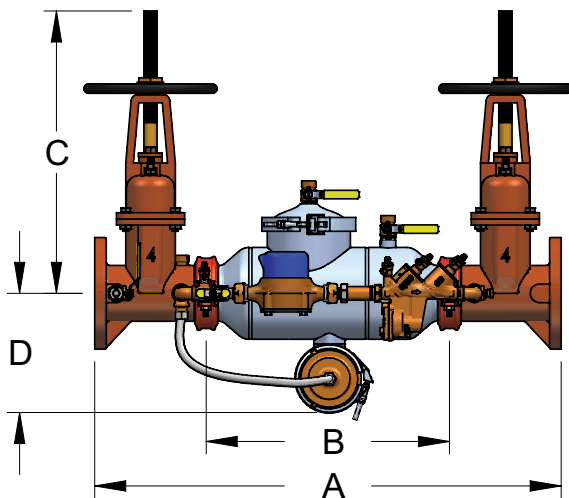
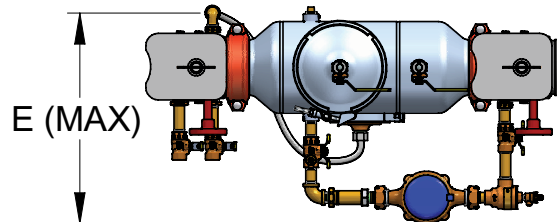
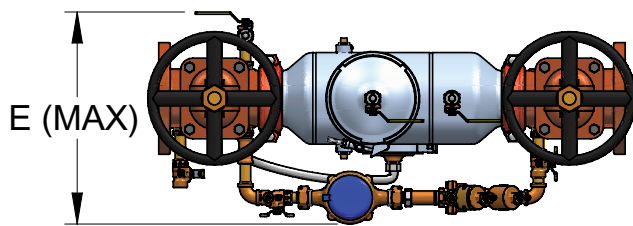
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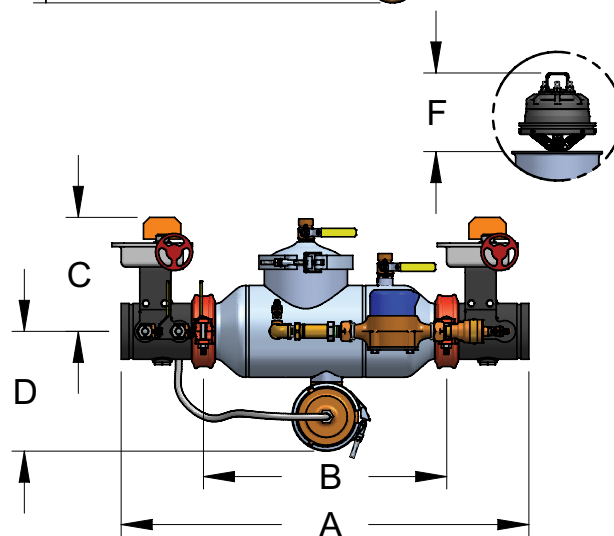
# BACKFLOW PREVENTION CATALOG

## Reduced Pressure Detector Assembly

### RPDA 4ALF SERIES



TYPE 1 BYPASS



TYPE 2 BYPASS (STD)

## DIMENSIONS

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ( $\pm 1/8"$  (3 mm) per joint)

See Page 65 For Flow Curves

| DIMENSIONS                    | 2-1/2"     | 60mm      | 3"         | 75mm      | 4"         | 100mm     | 6"         | 150mm     | 8"         | 200mm     | 10"        | 250mm     | 12"        | 300mm     |
|-------------------------------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|
| A (Butterfly Valves)          | 28 ±       | 711 ±     | 28-1/2 ±   | 724 ±     | 33-1/4 ±   | 845 ±     | 38-7/8 ±   | 987 ±     | 46-3/8 ±   | 1178 ±    | 52-1/4 ±   | 1327 ±    | N/A        | N/A       |
| A (Gate Valves)               | 31 ±       | 787 ±     | 32 ±       | 813 ±     | 38 ±       | 965 ±     | 45-7/8 ±   | 1165 ±    | 53-3/8 ±   | 1356 ±    | 62-1/4 ±   | 1581 ±    | 65-1/2 ±   | 1664 ±    |
| B (Less Shut-off Valves)      | 15-7/8 ±   | 403 ±     | 15-7/8 ±   | 403 ±     | 19-5/8 ±   | 498 ±     | 24-1/2 ±   | 622 ±     | 30 ±       | 762 ±     | 36 ±       | 914 ±     | 37 ±       | 940 ±     |
| C (Butterfly Valves)          | 8          | 230       | 8-3/8      | 213       | 9-1/8      | 232       | 10-1/8     | 257       | 12         | 305       | 13-3/8     | 340       | N/A        | N/A       |
| C (NRS/PI Gate Valves)        | 11-3/8     | 289       | 12-3/8     | 314       | 14-3/4     | 375       | 19         | 483       | 22-1/2     | 572       | 26-1/2     | 673       | 30         | 762       |
| C (OS&Y Open)                 | 16-3/8     | 41        | 18-7/8     | 479       | 22-3/4     | 578       | 30-1/8     | 765       | 37-3/4     | 959       | 45-3/4     | 1162      | 53-1/8     | 1349      |
| D (Centerline to bottom)      | 9-5/8      | 244       | 9-5/8      | 244       | 10-3/8     | 264       | 11-5/8     | 295       | 15-5/8     | 397       | 21         | 533       | 21         | 533       |
| E (Width Max)                 | 17         | 432       | 17         | 432       | 17         | 432       | 20         | 508       | 21-1/2     | 546       | 26-1/2     | 673       | 27-1/2     | 699       |
| F (Check Removal Clearance)   | 4-3/4      | 121       | 4-3/4      | 121       | 6-1/2      | 165       | 7-1/2      | 191       | 7-1/2      | 191       | 10         | 254       | 10         | 254       |
| Test Cocks (NPT)              | 1/2"       | 15        | 1/2"       | 15        | 1/2"       | 15        | 3/4"       | 20        | 3/4"       | 20        | 3/4"       | 20        | 3/4"       | 20        |
| <b>WEIGHTS</b>                | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> | <b>lb.</b> | <b>kg</b> |
| Net Wt. (Less Shut-offs)      | 48         | 22        | 49         | 22        | 65         | 30        | 101        | 46        | 245        | 111       | 787        | 358       | 890        | 405       |
| Net Wt. (w/ Butterfly Valves) | 75         | 34        | 79         | 36        | 109        | 50        | 169        | 77        | 376        | 171       | 1005       | 457       | N/A        | N/A       |
| Net Wt. (w/ OS&Y Gate Valves) | 144        | 65        | 170        | 77        | 220        | 100       | 350        | 159       | 722        | 328       | 1673       | 760       | 2082       | 946       |

#### Notes:

1. Internal body connections are grooved on 2-1/2"-10" sizes.
2. Internal body connections are flanged on 12" size.

# BACKFLOW PREVENTION CATALOG

## Reduced Pressure Detector Assembly

### RPDA 4AnLF SERIES



Sizes 2-1/2" - 12"



TriForce™ Check



Optional Valve Setter (see pg 50)

### n STYLE REDUCED PRESSURE DETECTOR ASSEMBLY

The Apollo® MODEL RPDA 4AnLF Reduced Pressure Detector Assembly consists of two independently acting, TriForce™ center stem guided check valves with a differential pressure relief valve located between the check valves. The unit is designed to give maximum protection against backflow of health or non-health hazard fluids by either back-pressure or back-siphonage and at the same time detect leakage or unauthorized use of water from fire or automatic sprinkler systems. The normally vertical up/vertical down oriented body incorporates an internal swivel connection providing the ability to pivot the second check 180° to a vertical up/vertical up flow. The durable domestic stainless steel units (2-1/2" to 8") and the FDA epoxy coated ductile iron units (10" and 12") are easily maintained in the line without any special tools. The TriForce™ check valves operate with a spring assist in the flowing condition to provide low flow rates which are documented by ASSA or USC FCC&HR approval curves.

The Type 2 bypass uses the first check of the mainline assembly as the first check of the bypass. The second check of the bypass is a single check valve with a model number and serial number for test recording. This arrangement is approved by the Tenth Edition of the USC FCC&HR Manual of Cross Connection Control as well as ASSE. The arrangement provides the same level of protection as the original (still optional) Type 1 bypass and the testing procedure is the same.

#### FEATURES

- Domestic Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance - no special tools required
- Drop-in check retainers: 2-1/2"-6"
- Bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCC&HR backflow preventer approval agencies
- Center stem guided TriForce™ check valves
- Optional air gap drains (see pg 52)
- Small installation space required - small footprint
- Approved for n-flow and vertical up flow\*
- Chloramine-resistant elastomers
- Made in the USA
- **Lead-Free** standard
- USC FCC & HR\*
- CSA B64.4
- ASSE 1047
- UL, ULC Classified
- FM approved\*
- Maximum working pressure 175 psi
- Temperature range 33°F - 140°F, 180°F intermittent
- Optional valve setters eliminate need for thrust blocks below grade
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- 5 year, domestic warranty
- Optional mounting of bypass on either side for ease of installation

\* Contact factory for approval details

#### MATERIALS

| Part               | Material                      |
|--------------------|-------------------------------|
| Body (2-1/2"-8")   | 304 Stainless Steel           |
| Body (10 & 12")    | FDA Epoxy Coated Ductile Iron |
| Covers (2-1/2"-6") | Glass Filled PPO/SS           |
| Covers (8")        | 304 Stainless Steel           |
| Covers (10 & 12")  | FDA Epoxy Coated Ductile Iron |
| Relief Valve       | Bronze (C84400/LF C89836)     |
| Check Valves       | Bronze/Glass-filled PPO/SS    |
| Springs            | Stainless Steel               |
| Seat Discs         | Chloramine-resistant Silicone |

#### FACTORY CODE

| 4AnLF                      | 7 X   | X  | X   | X [X]   |
|----------------------------|---|--|---|---|
|                            | BY-PASS SUB-ASSEMBLY OPTIONS  | SIZE   | METER OPTION  | SHUT-OFF VALVES (Inlet x Outlet)  |
| 4AnLF = Lead Free Standard | 0 = Type 1 w/ 1/2" Reduced Pressure<br>2 = Type 2 w/ 1/2" Single Check (Standard)<br>3 = Type 1 w/ bypass on left*<br>4 = Type 2 w/ bypass on left* | 9 = 2-1/2"<br>0 = 3"<br>A = 4"<br>C = 6"<br>E = 8"<br>G = 10"<br>H = 12" | C = Cubic feet/min<br>E = Gallons/min<br>G = Less meter | 1 = Less Shut-off Valves<br>3 = OS&Y Flg x OS&Y Flg<br>4 = OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv†<br>6 = OS&Y Flg x Post indicator Flg**<br>7 = OS&Y Flg x OS&Y Grv<br>8 = OS&Y Grv x OS&Y Grv<br>9 = Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv†<br>10 = OS&Y Flg x Post Indicator Grv**<br>13 = Post Indicator Flg x Mon. Butterfly Vlv Grv†<br>14 = Post Indicator Flg x Post Indicator Flg<br>16 = Mon Butterfly Vlv Grv x Post Indicator Flg†<br>17 = Post Indicator Flg x OS&Y Grv<br>18 = OS&Y Grv x Post Indicator Grv<br>19 = Mon. Butterfly Vlv Grv x Post Indicator Grv<br>20 = Post Indicator Flg x OS&Y Flg |

Example:

**4ANLF 70A E3** = 4" size Lead Free Reduced Pressure Detector Assembly with meter in GPM and OS&Y flanged inlet x OS&Y flanged outlet shut-off valves.

\* Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side

\*\* Post indicator with plate & nut option not available in 2-1/2" size.

† Butterfly valves not available in 12" size.

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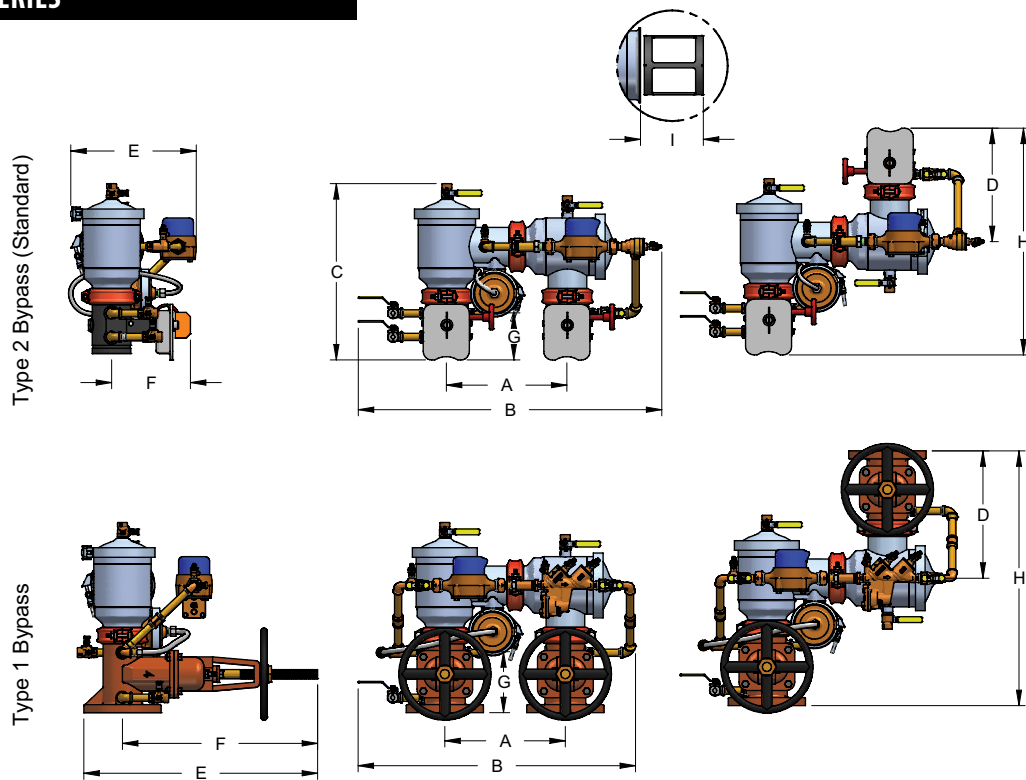




# BACKFLOW PREVENTION CATALOG

## Reduced Pressure Detector Assembly

### RPDA 4AnLF SERIES



## DIMENSIONS

Nominal dimensions are shown. Allowances must be made for manufacturers' tolerances ( $\pm 1/8"$  (3 mm) per joint)

See Page 66 For Flow Curves

| DIMENSIONS                             | 2-1/2"       | 60mm      | 3"           | 75mm      | 4"           | 100mm     | 6"           | 150mm      | 8"           | 200mm      | 10"        | 250mm      | 12"          | 300mm      |
|--|--------------|-----------|--------------|-----------|--------------|-----------|--------------|------------|--------------|------------|------------|------------|--------------|------------|
| A Centerline to Centerline             | 12-1/2 $\pm$ | 318 $\pm$ | 12-1/2 $\pm$ | 318 $\pm$ | 14 $\pm$     | 356 $\pm$ | 16 $\pm$     | 406 $\pm$  | 18-1/2 $\pm$ | 470 $\pm$  | 21 $\pm$   | 533 $\pm$  | 26-3/4 $\pm$ | 679 $\pm$  |
| B (Butterfly Valves)                   | 32-3/4 $\pm$ | 832 $\pm$ | 32-3/4 $\pm$ | 832 $\pm$ | 35-1/2 $\pm$ | 902 $\pm$ | 40 $\pm$     | 1016 $\pm$ | 44 $\pm$     | 1118 $\pm$ | 54 $\pm$   | 1372 $\pm$ | N/A          | N/A        |
| B (Gate Valves)                        | 31 $\pm$     | 787 $\pm$ | 31 $\pm$     | 787 $\pm$ | 31-3/4 $\pm$ | 806 $\pm$ | 36-3/4 $\pm$ | 933 $\pm$  | 41-1/2 $\pm$ | 1054 $\pm$ | 49 $\pm$   | 1245 $\pm$ | 55-3/4 $\pm$ | 1416 $\pm$ |
| C (Butterfly Valves)                   | 18-1/4       | 464       | 18-1/2       | 470       | 20           | 508       | 24-3/4       | 629        | 28-1/2       | 724        | 35         | 889        | N/A          | N/A        |
| C (Gate Valves)                        | 19-5/8       | 498       | 20           | 508       | 22-1/2       | 572       | 27-3/4       | 705        | 32-1/8       | 816        | 40         | 1016       | 44           | 1118       |
| D (Centerline to top-Butterfly Valves) | 11-1/2       | 292       | 11-3/4       | 298       | 13-1/4       | 337       | 15-3/8       | 391        | 17-7/8       | 454        | 19-3/4     | 502        | N/A          | N/A        |
| D (Centerline to top-Gate Valves)      | 13           | 330       | 13-1/2       | 343       | 14-7/8       | 378       | 18           | 457        | 21-3/8       | 543        | 24-3/4     | 629        | 28-3/4       | 730        |
| E (Butterfly Valves)                   | 11-1/2       | 292       | 12-1/8       | 308       | 12-7/8       | 327       | 15-7/8       | 403        | 22-1/4       | 565        | 23-1/8     | 587        | N/A          | N/A        |
| E (OS&Y Open)                          | 19-7/8       | 505       | 24-1/4       | 616       | 27-1/4       | 692       | 32-3/4       | 832        | 44-1/2       | 1130       | 54         | 1372       | 62-3/4       | 1594       |
| E (NRS/PI)                             | 14-7/8       | 378       | 16-1/8       | 410       | 19-1/4       | 489       | 24-1/4       | 616        | 29-1/4       | 743        | 36-3/8     | 924        | 40           | 1016       |
| F (Butterfly Valves)                   | 8            | 203       | 8-3/8        | 213       | 9            | 229       | 10-7/8       | 276        | 12-7/8       | 327        | 13-1/2     | 343        | N/A          | N/A        |
| F (OS&Y Open)                          | 16-3/8       | 416       | 20-1/2       | 521       | 22-3/4       | 578       | 28           | 711        | 37-3/4       | 959        | 46         | 1168       | 53-1/8       | 1349       |
| F (NRS/PI)                             | 11-3/8       | 289       | 12-3/8       | 314       | 14-3/4       | 375       | 19           | 483        | 22-1/2       | 572        | 26-1/2     | 673        | 30           | 762        |
| G (Butterfly Valves)                   | 4-1/8        | 105       | 4-1/2        | 114       | 4-3/8        | 111       | 6-1/2        | 165        | 5-1/4        | 133        | 4          | 102        | N/A          | N/A        |
| G (Gate Valves)                        | 5-1/2        | 140       | 6            | 152       | 6            | 152       | 9            | 229        | 9            | 229        | 9          | 229        | 10           | 254        |
| H (Butterfly Valves)                   | 23           | 584       | 23-1/2       | 597       | 25           | 635       | 29           | 737        | 3-3/4        | 908        | N/A        | N/A        | N/A          | N/A        |
| H (Gate Valves)                        | 26           | 660       | 27           | 686       | 29-3/4       | 756       | 36           | 914        | 42-3/4       | 1086       | N/A        | N/A        | N/A          | N/A        |
| I (Check Removal Clearance)            | 6            | 152       | 6            | 152       | 6            | 152       | 8            | 203        | 8-1/2        | 216        | 12         | 305        | 12           | 305        |
| Test Cocks (NPT)                       | 1/2"         | 13        | 1/2"         | 13        | 1/2"         | 13        | 3/4"         | 20         | 3/4"         | 20         | 3/4"       | 20         | 3/4"         | 20         |
| <b>WEIGHTS</b>                         | <b>lb.</b>   | <b>kg</b> | <b>lb.</b>   | <b>kg</b> | <b>lb.</b>   | <b>kg</b> | <b>lb.</b>   | <b>kg</b>  | <b>lb.</b>   | <b>kg</b>  | <b>lb.</b> | <b>kg</b>  | <b>lb.</b>   | <b>kg</b>  |
| Net Wt. (Less Shut-offs)               | 58           | 26        | 58           | 26        |              |           | 83           | 38         | 325          | 148        | 861        | 391        | 987          | 449        |
| Net Wt. (w/ Butterfly Valves)          | 85           | 39        | 88           | 40        | 92           | 42        | 151          | 69         | 456          | 207        | 1039       | 472        | N/A          | N/A        |
| Net Wt. (w/NRS Gate Valves)            | 144          | 65        | 169          | 77        | 197          | 90        | 322          | 146        | 788          | 358        | 1507       | 685        | 2123         | 965        |
| Net Wt. (w/ OS&Y Gate Valves)          | 154          | 70        | 179          | 81        | 203          | 92        | 332          | 151        | 802          | 365        | 1529       | 695        | 2177         | 990        |

#### Notes:

1. Internal body connections are grooved on 2-1/2"-10" sizes.
2. Internal body connections are flanged on 12" size.



For additional information, submittal sheets and manuals, visit [www.apollovalves.com](http://www.apollovalves.com)

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# BACKFLOW PREVENTION CATALOG

## Vacuum Breaker Backflow Preventers

### AVB1/AVB2 SERIES



**AVB1**

Sizes 1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"



**AVB2**

Sizes 1/4", 3/8", 1/2", 3/4"  
(Optional Polished Chrome Finish Shown)

### ATMOSPHERIC TYPE VACUUM BREAKERS

The Apollo Series Atmospheric Type Vacuum Breakers are designed to prevent back-siphonage of polluted water into a potable water system. They should only be installed in areas where spillage of water could not cause damage and where it can be accessible for periodic maintenance. These devices are not designed for continuous pressure application. Should be installed a minimum of 6" above all downstream piping with no downstream shutoffs.

#### OPERATION

During flow conditions, the flow of water lifts the float disc and seals the atmospheric vent at all rates of flow, preventing leakage. When a negative pressure is created at the supply line or when the water supply valve upstream of the device is closed, the float disc will fall, thus opening the atmospheric vent. This prevents back-siphonage and creation of vacuum at the discharge line.

#### FEATURES

- Corrosion resistant
- Bronze body (AVB1)
- Forged Body (AVB2)
- Suitable for hot or cold water service:  
(up to 212°F at 125 psig) for up to 1"  
(up to 180°F at 125 psig) for 1-1/4" thru 2"
- Lead-Free option on AVB1/38-100 Series
- Heat resistant silicone seat disc
- Rough brass, rough chrome, or polished chrome finish
- Easy to maintain
- Compact and lightweight
- Durable
- ASSE1001

### MATERIALS

| Part              | Material                       |
|-------------------|--------------------------------|
| Valve Body (AVB1) | Cast Bronze (C84400 LF C89836) |
| Valve Body (AVB2) | Forged Brass                   |
| Seat Disc         | Silicone                       |
| Float & Gasket    | Polypropylene                  |
| Canopy            | Powder Coated Steel            |
| Screw             | Zinc-plated Steel              |

Contact local water authorities for installation/service requirements.

### SUFFIX

| No. | Finish                        |
|-----|-------------------------------|
| 01  | Rough Brass                   |
| 03  | Rough Chrome (1/4" - 1" only) |
| 06  | Polished Chrome (AVB2)        |
| N   | n shape (AVB2)                |

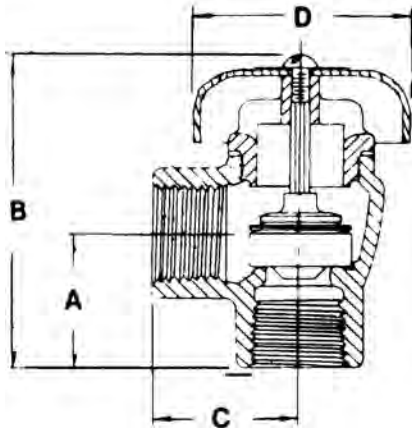
### FACTORY CODE

| 38(LF) X                               | OX         | OX                                |
|--|------------|-----------------------------------|
|  | SIZE       | FINISH                            |
| 1 = Bronze                             | 1 = 1/4"   | 1 = Rough Brass                   |
| 2 = Forged Brass (not available in LF) | 2 = 3/8"   | 3 = Rough Chrome (1/4" - 1" only) |
|  | 3 = 1/2"   | 6 = Polished Chrome (AVB2 only)   |
|  | 4 = 3/4"   |                                   |
|  | 5 = 1"     |                                   |
|  | 6 = 1-1/4" |                                   |
|  | 7 = 1-1/2" |                                   |
|  | 8 = 2"     |                                   |

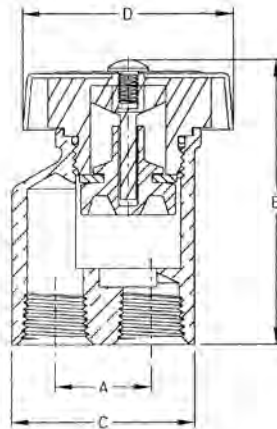
# BACKFLOW PREVENTION CATALOG

## Vacuum Breaker Backflow Preventers

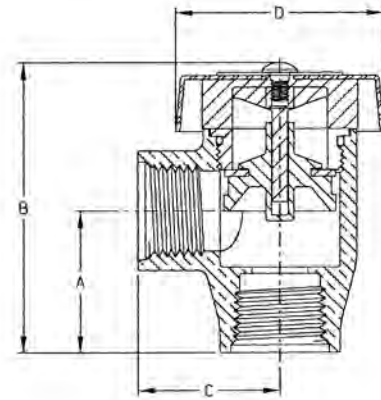
### AVB1/AVB2 SERIES



**AVB1**  
**38/38LF-10X**



**38-23xN (n Flow)**



**AVB2**  
**38-20x**

## DIMENSIONS

See Page 67 For Flow Curves

| Factory No. | Model No. | Size In. | Size mm. | A (In.) | A (mm.) | B (In.) | B (mm.) | C (In.) | C (mm.) | D (In.) | D (mm.) | Wt. Lbs. | Wt. Kgs. |
|-------------|-----------|----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|
| 38-101      | AVB114    | 1/4      | 6        | 29/32   | 23      | 2-3/8   | 60      | 1-1/32  | 26      | 1-13/16 | 46      | 50.96    | 23       |
| 38-102      | AVB138    | 3/8      | 10       | 29/32   | 23      | 2-3/8   | 60      | 1-1/32  | 26      | 1-13/16 | 46      | 47.7     | 22       |
| 38-103      | AVB112    | 1/2      | 15       | 1-3/32  | 28      | 2-1/2   | 65      | 1-3/16  | 30      | 1-3/16  | 30      | 54.7     | 25       |
| 38-104      | AVB134    | 3/4      | 20       | 1-5/16  | 33      | 3-1/16  | 78      | 1-15/32 | 37      | 2-1/8   | 54      | 79.7     | 36       |
| 38-105      | AVB11     | 1        | 25       | 1-3/4   | 45      | 4-1/16  | 103     | 1-7/8   | 48      | 2-7/8   | 73      | 174      | 79       |
| 38-106      | AVB1114   | 1-1/4    | 32       | 2       | 50      | 4-3/8   | 111     | 2       | 50      | 3-3/4   | 95      | 316      | 143      |
| 38-107      | AVB1112   | 1-1/2    | 40       | 2       | 50      | 4-3/8   | 111     | 2       | 50      | 3-3/4   | 95      | 289      | 131      |
| 38-108      | AVB12     | 2        | 50       | 2-1/8   | 54      | 4-1/2   | 114     | 2-1/4   | 57      | 3-3/4   | 95      | 369      | 167      |
| 38LF-101    | AVB114LF  | 1/4      | 6        | 29/32   | 23      | 2-3/8   | 60      | 1-1/32  | 26      | 1-13/16 | 46      | 50.96    | 23       |
| 38LF-102    | AVB138LF  | 3/8      | 10       | 29/32   | 23      | 2-3/8   | 60      | 1-1/32  | 26      | 1-13/16 | 46      | 47.7     | 22       |
| 38LF-103    | AVB112LF  | 1/2      | 15       | 1-3/32  | 28      | 2-1/2   | 65      | 1-3/16  | 30      | 1-3/16  | 30      | 54.7     | 25       |
| 38LF-104    | AVB134LF  | 3/4      | 20       | 1-5/16  | 33      | 3-1/16  | 78      | 1-15/32 | 37      | 2-1/8   | 54      | 79.7     | 36       |
| 38LF-105    | AVB11LF   | 1        | 25       | 1-3/4   | 45      | 4-1/16  | 103     | 1-7/8   | 48      | 2-7/8   | 73      | 174      | 79       |
| 38LF-106    | AVB1114LF | 1-1/4    | 32       | 2       | 50      | 4-3/8   | 111     | 2       | 50      | 3-3/4   | 95      | 316      | 143      |
| 38LF-107    | AVB1112LF | 1-1/2    | 40       | 2       | 50      | 4-3/8   | 111     | 2       | 50      | 3-3/4   | 95      | 289      | 131      |
| 38LF-108    | AVB12LF   | 2        | 50       | 2-1/8   | 54      | 4-1/2   | 114     | 2-1/4   | 57      | 3-3/4   | 95      | 369      | 167      |
| 38-201      | AVB214    | 1/4      | 6        | 1-3/32  | 28      | 2-5/16  | 59      | 1-1/32  | 26      | 21/32   | 17      | 50.6     | 23       |
| 38-202      | AVB238    | 3/8      | 10       | 1-3/32  | 28      | 2-5/16  | 59      | 1-1/32  | 26      | 21/32   | 17      | 47.7     | 22       |
| 38-203      | AVB212    | 1/2      | 15       | 1-9/32  | 33      | 2-5/8   | 67      | 1-9/32  | 33      | 1-7/8   | 48      | 54.7     | 25       |
| 38-204      | AVB234    | 3/4      | 20       | 1-15/32 | 37      | 3       | 80      | 1-15/32 | 37      | 2       | 50      | 63.1     | 29       |
| 38-231N     | DMVB14    | 1/4      | 6        | 3/4     | 20      | 2-7/32  | 56      | 1-7/16  | 36      | 21/32   | 17      | 26.2     | 12       |
| 38-232N     | DMVB38    | 3/8      | 10       | 7/8     | 22      | 2-7/32  | 56      | 1-3/4   | 44      | 21/32   | 17      | 31.2     | 14       |

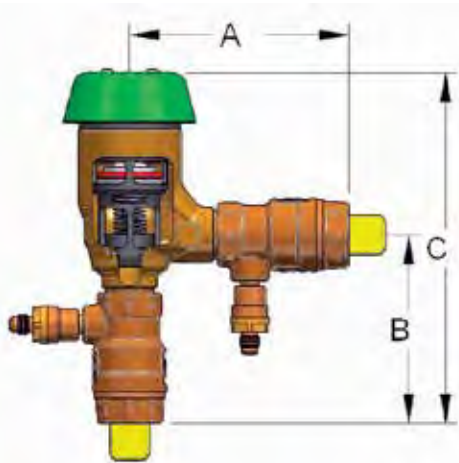
# BACKFLOW PREVENTION CATALOG

## Pressure Vacuum Breaker Backflow Preventers

### PVB 4A SERIES



Sizes 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"



### 4A FREEZE RESISTANT PRESSURE VACUUM BREAKER

The Apollo Model PVB 4A Pressure Vacuum Breakers are designed to prevent contamination of potable water due to back-siphonage. An integral relief valve serves to reduce the possibility of damage due to intermittent freezing conditions. The modular check valve cartridge has a replaceable seat and a reversible silicone seat disc. Apollo ball valves with stainless steel handles and nuts are standard.

#### FEATURES

- Modular cartridge check valve
- Low pressure loss
- Built-in freeze resistant relief valve
- Compact yet easy to maintain
- Apollo ball valves w/SS handles & nuts standard
- Test cocks located for easy draining
- Threaded testcock protectors
- Corrosion resistant
- 5 year, domestic warranty
- No special tools required
- **Lead-Free** option (3/4" - 1")
- Unique canopy detachment
- Patent pending
- ASSE 1020
- USC FCCCHR 1/2", 3/4", 1"
- CSA B64.1.2
- Easy maintenance
- Maximum operating pressure 150 psi
- Design pressure 300 psi
- Temperature range 33°F - 140°F
- **MADE IN THE USA**

#### MATERIALS

| Part                  | Material                      |
|-----------------------|-------------------------------|
| Body                  | Bronze (C84400 - LF C89836)   |
| Canopy                | UV Resistant ABS              |
| Bonnet                | Glass-Filled PPO              |
| Check Valve Cartridge | Glass-Filled PPO              |
| Springs               | Stainless Steel               |
| Seat Discs            | Chloramine-resistant Silicone |
| Float                 | Glass-Filled                  |
| O-rings               | Chloramine-Resistant EPDM     |
| Ball Valve Handles    | Stainless Steel               |

Contact local water authorities for installation/service requirements.

#### FACTORY CODE

| 4A [X]                       | 50 X       | 0 X  | X   |
|------------------------------|------------|--|---|
|                              | SIZE       | SHUT-OFF VALVES                            | OPTIONS (CAN BE COMBINED)                             |
| 4A = Standard                | 3 = 1/2"   | 2 = w/ ball valves (standard)              | F = SAE threaded test cocks (standard 1/2", 3/4", 1") |
| 4ALF = Lead Free (3/4" - 1") | 4 = 3/4"   | 4 = w/union ball valves (3/4" and 1" only) | LL = locking lever handles (1-1/4", 1-1/2", 2")       |
|                              | 5 = 1"     |  | LT = Locking tee handles (1/2", 3/4", 1")             |
|                              | 6 = 1-1/4" |  |   |
|                              | 7 = 1-1/2" |  |   |
|                              | 8 = 2"     |  |   |

#### DIMENSIONS

See Page 68 For Flow Curves

| Factory No. | Model No. | Size In. | Size mm. | A (In.) | A (mm.) | B (In.) | B (mm.) | C (In.) | C (mm.) | Wt. Lbs. | Wt. Kgs. |
|-------------|-----------|----------|----------|---------|---------|---------|---------|---------|---------|----------|----------|
| 4A-503-02   | PVB4A12   | 1/2"     | 12       | 4-1/8   | 105     | 3-1/2   | 89      | 7       | 178     | 3.2      | 1.5      |
| 4A-504-02   | PVB4A34   | 3/4"     | 20       | 4-5/8   | 117     | 4       | 100     | 7-1/2   | 190     | 3.8      | 1.7      |
| 4A-505-02   | PVB4A1    | 1"       | 25       | 5-1/2   | 140     | 4-3/4   | 120     | 8-1/2   | 215     | 5.2      | 2.4      |
| 4A-506-02   | PVB4A114  | 1-1/4"   | 32       | 7-1/8   | 180     | 5-1/2   | 140     | 10      | 250     | 9.1      | 4.1      |
| 4A-507-02   | PVB4A112  | 1-1/2"   | 40       | 7-3/8   | 185     | 5-7/8   | 150     | 10-3/8  | 265     | 12.5     | 5.7      |
| 4A-508-02   | PVB4A2    | 2"       | 50       | 9       | 230     | 6-7/8   | 175     | 12      | 300     | 21.0     | 9.5      |



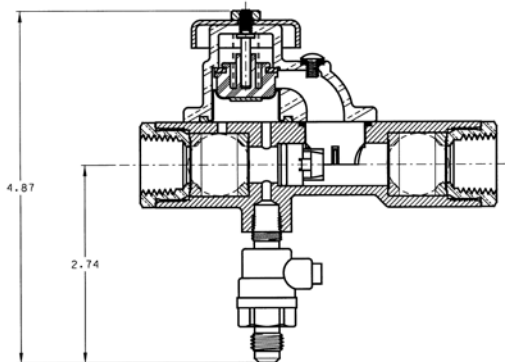
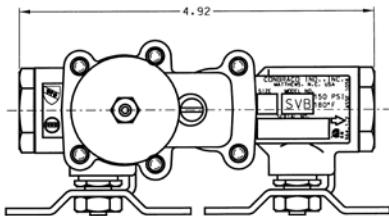
# BACKFLOW PREVENTION CATALOG

## Spill Resistant Vacuum Breaker Backflow Preventers

### SVB 4W SERIES



Sizes 1/4", 3/8", 1/2"



### SPILL RESISTANT VACUUM BREAKERS

The Apollo Series SVB 4W Spill Resistant Vacuum Breaker is designed to prevent contamination of the potable water supply due to back-siphonage. The SVB is ideally suited for continuous pressure, indoor applications where water spillage is undesirable. The device has a straight through flow path for minimal head loss. All components are easily accessible for easy repair and maintenance. All components are made of corrosion resistant materials for years of reliable service. Should be installed 12" above all downstream piping.

#### OPERATION

During normal flow conditions, the check valve remains open and the atmospheric vent seals in the bonnet assembly. As the line pressure falls to 1 psi, the spring loaded atmospheric vent opens and the check valve closes, breaking the vacuum and thereby preventing back-siphonage. Water is not allowed to spill at any time during operation.

#### FEATURES

- Corrosion Resistant
- In-Line Flow
- Integral Shut-Off Valves w/Stainless Steel Handles and Nuts
- Threaded testcock protectors
- Designed For Easy Maintenance
- **Lead-Free** option
- Economical
- Low Head Loss
- Maximum Working Pressure 150 PSIG
- Operating Temperature Range 33°F-180°F
- ASSE 1056
- CSA B64.1.2
- 5 year, domestic warranty

#### MATERIALS

| Part               | Material                         |
|--------------------|----------------------------------|
| Body               | PPO, Bronze (C84400 - LF C89836) |
| Springs            | Stainless Steel                  |
| Seat Discs         | Silicone Rubber                  |
| Valve Canopy       | ABS Plastic                      |
| Float              | Acetal                           |
| Fasteners          | Stainless Steel                  |
| Ball Valve Handles | Stainless Steel                  |

Contact local water authorities for installation/service requirements.

### FACTORY CODE

| 4W [X]                                | 50 X     | 0 2              |
|---------------------------------------|----------|------------------|
|                                       | SIZE     | SHUTOFFS         |
| 4W = Standard                         | 1 = 1/4" | SS = Tee Handles |
| 4WLF = Lead Free (3/8" and 1/2" only) | 2 = 3/8" |                  |
|                                       | 3 = 1/2" |                  |

### DIMENSIONS

See Page 67 For Flow Curves

| Model No.      | SVB4W14    | SVB4W14    | SVB4W38    | SVB4W38    | SVB4W12    | SVB4W12    |
|----------------|------------|------------|------------|------------|------------|------------|
| Factory No.    | 4W-501-02  | 4W-501-02  | 4W-502-02  | 4W-502-02  | 4W-503-02  | 4W-503-02  |
| Size           | 1/4"       | 6 mm.      | 3/8"       | 10 mm.     | 1/2"       | 15 mm.     |
| Test Cock      | 1/4" Flare | 1/4" Flare | 1/4" Flare | 1/4" Flare | 1/4" Flare | 1/4" Flare |
| WEIGHTS        | lbs.       | kg.        | lbs.       | kg.        | lbs.       | kg.        |
| Net Wt. (Lbs.) | 1.16       | 0.5        | 1.16       | 0.5        | 1.16       | 0.5        |
| Shipping Wt.   | 1.26       | 0.6        | 1.26       | 0.6        | 1.26       | 0.6        |



For additional information, submittal sheets and manuals, visit [www.apollovalves.com](http://www.apollovalves.com)

Customer Service (704) 841-6000

REV. 8/26/13

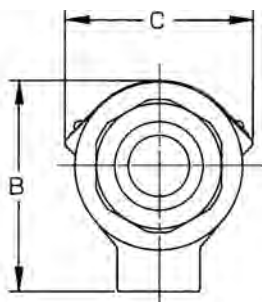
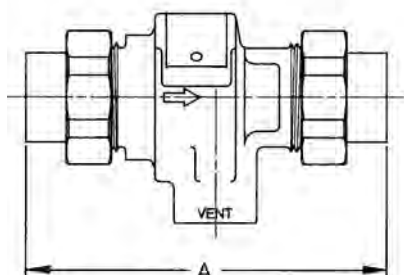
# BACKFLOW PREVENTION CATALOG

## Dual Check w/Atmospheric Port Backflow Preventers

### DCAP SERIES



Sizes 1/2", 3/4"



### DUAL CHECK WITH ATMOSPHERIC PORT BACKFLOW PREVENTER

The Apollo DCAP Series Backflow Preventer is designed to protect residential and commercial water supply lines from back-siphonage or back-pressure of non-potable (non-hazardous) substances. It has an intermediate atmospheric vent to insure protection from backflow conditions. It consists of two independently acting and spring-loaded check valves in a corrosion resistant material.

#### OPERATION

During normal flow operation, the vent valve is closed, and the two check valves are open allowing flow of water through the unit. Each check valve is designed to hold at least 1 psi in the direction of flow. When a back-siphonage condition occurs, both check valves close and the atmospheric vent opens to permit air to enter the intermediate zone. In the event of back-pressure and if the second check valve is prevented from closing tightly, leakage will be vented to the atmosphere through the vent port.

#### FEATURES

- Corrosion resistant
- Low head loss
- Independently acting check valves
- Ease of repair and installation
- Economical
- Suitable for hot or cold water service
- Durable
- **Lead-Free** option
- Maximum working pressure 175 psig
- ASSE 1012
- CSA B64.3
- Inlet temperature range 33°F-210°F
- 5 year, domestic warranty
- Maximum backflow temperature 250°F

#### MATERIALS

| Part                     | Material                    |
|--------------------------|-----------------------------|
| Body                     | Bronze (C84400 - LF C89836) |
| Springs                  | Stainless Steel             |
| C.V. Seat Discs          | EPDM                        |
| Seats                    | Glass-Filled PPO            |
| Spring and Seat Retainer | Glass-Filled PPO            |
| O-Rings                  | Nitrile/EPDM                |
| Poppets                  | Glass-Filled PPO            |

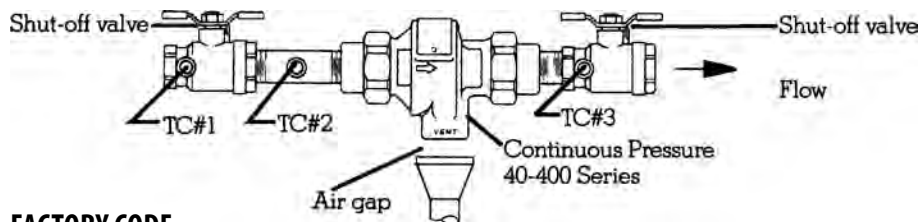
Contact local water authorities for installation/service requirements.

#### DIMENSIONS

See Page 69 For Flow Curves

| Model No.   | DCAP12, DCAP34       |
|-------------|----------------------|
| Factory No. | 40-4x33xM, 40-4x44xM |
| Size        | 1/2", 3/4"           |
| A           | 5                    |
| B           | 2-15/16              |
| C           | 2-5/8                |
| WEIGHTS     | lbs.                 |
| Unit Weight | 1.9                  |

x = connection type



#### FACTORY CODE

| 40 [X]                            | 4 X   | X - X                 | X   | M | X   |
|-----------------------------------|---|-----------------------|---|---|---|
|                                   | UNION INLET CONNECTION                          | INLET AND OUTLET SIZE | UNION OUTLET CONNECTION                                     | M | OPTION  |
| 40 = Standard<br>40LF = Lead Free | A = FNPT<br>H = Solder joint<br>2 = Female BSPP | 3 = 1/2"<br>4 = 3/4"  | A = FNPT<br>B = MNPT<br>F = Female BSPP<br>H = Solder joint |   | C = Canadian<br>(discharge port not threaded) |

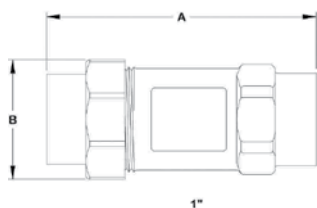
# BACKFLOW PREVENTION CATALOG

## Dual Check Backflow Preventers

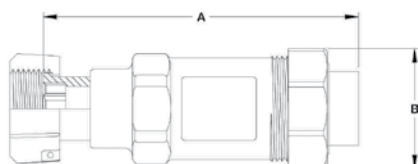
### DUC-4N SERIES



Dimensions (In.) – Weight (Lbs.)



Union x NPT (shown)



Meter Swivel x NPT (shown)

### DUAL CHECK VALVE

The Apollo DUC-4N Series Dual Check Valve Backflow Preventer is designed to prevent cross-connections of non-potable water (non-hazardous) into safe drinking water systems. It is a compact and economical device that consists of two independently-acting, spring-loaded check valves in a corrosion-resistant material.

#### OPERATION

Each of the two spring-loaded check valves is designed to open at 1 psi differential in the direction of flow. The check valves will remain tightly closed until there is a demand for water downstream. If the downstream pressure of the device increases above the supply pressure or there is a reverse direction of flow, the check valves will close to prevent backflow. If the second check valve is prevented from closing tightly, the first check will close to provide protection from a backflow condition.

#### FEATURES

- Low Head Loss
- Independently-acting Check Valves
- Compact and Lightweight
- Corrosion Resistant
- Replaceable Check Modules
- Industry Lay Lengths
- **Lead-Free** option
- Available in Standard and Swivel Types
- Maximum Working Pressure 175 psi
- Operating Temperature Range 33°F-180°F
- ASSE1024
- CSA B64.6
- 5 year, domestic warranty

#### MATERIALS

| Part            | Material   |
|-----------------|--|
| Body            | Bronze (C84400 LF C89836)                        |
| Union Tailpiece | Brass  |
| Union Nut       | Brass  |
| Check Modules   | Glass-Filled PPO (3/8"-1/2")<br>Acetal (3/4"-1") |
| Springs         | Stainless Steel                                  |
| Seat Discs      | Buna-N   |

Contact local water authorities for installation/service requirements.

#### METER THREAD SIZING

|            |        |
|------------|--------|
| 5/8" Meter | 3/4"   |
| 3/4" Meter | 1"     |
| 1" Meter   | 1-1/4" |

Contact Customer Service for model numbers.

#### DIMENSIONS

| Size              | A     | B    | Wt. (Lbs.) |
|-------------------|-------|------|------------|
| 3/8" & 1/2"       | 3.32  | 1.88 | .70        |
| 3/4"              | 4.375 | 2    | 1.40       |
| 3/4" Meter Swivel | 4.75  | 2    | 1.60       |
| 1"                | 4.375 | 2    | 1.40       |
| 1" Meter Swivel   | 4.75  | 2    | 1.75       |

#### FACTORY CODE

See Page 69 For Flow Curves

| 4N [X]                            | 3 X  | X X  | X   | X                                       |
|-----------------------------------|--|--|---|---|
|                                   | UNION INLET CONNECTION <sup>1,2</sup>  | INLET AND OUTLET SIZE  | OUTLET CONNECTION <sup>1,2</sup>  | FINISH                                  |
| 4N = Standard<br>4NLF = Lead Free | A = FNPT<br>B = MNPT<br>C = Female Meter Thread<br>E = Male Meter Thread<br>S = Female Meter Swivel<br>2 = Female BSPP | 2 = 3/8"<br>3 = 1/2"<br>4 = 3/4"<br>5 = 1"<br>6 = 1-1/4" (Meter Thread sizing for 1" meter swivel) | A = FNPT<br>B = MNPT<br>C = Female Meter Thread<br>E = Male Meter Thread<br>F = Female BSPP | Blank = Satin Brass<br>C = Satin Chrome |

#### Notes:

- 1 For meter threads, order one size larger than meter size. (i.e. - 4N3S54A = 1" Female Meter Swivel Inlet (for connection to 3/4" meter) x 3/4" FNPT outlet)
- 2 Not all inlet and outlet combinations are available. Please contact Conbraco Customer Service for availability.

#### Example:

**4NLF 3S54A** = Lead Free Dual Check with Femal Swivel 1" Inlet (for 3/4" meter connection x 3/4" FNPT outlet)



For additional information, submittal sheets and manuals, visit [www.apollovalves.com](http://www.apollovalves.com)

Customer Service (704) 841-6000

# BACKFLOW PREVENTION CATALOG

## Dual Check Backflow Preventers

### DUC 4FP SERIES

### DUAL CHECK VALVE

The Apollo DUC 4FP Series Dual Check Backflow Preventer for Residential Fire Sprinkler Systems prevents backflow by either backpressure or backsiphonage from a cross-connection between potable water lines and substances that are objectionable, but not health-hazards.

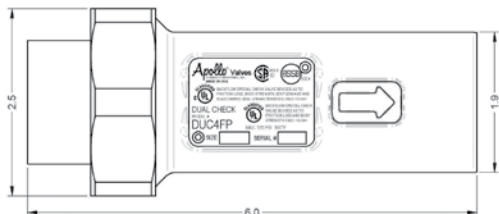
#### FEATURES

- Low Pressure Loss
- Corrosion Resistant
- Replaceable Check Modules
- Pressure drop at 30 gpm is less than 6 psi
- Complies with NFPA Standard 13D
- 5 year, domestic warranty
- Maximum Supply Pressure 175 psi
- Temperature Range 33°F - 180°F
- ASSE 1024
- UL Classified
- CSA B64.6
- Made in the USA

#### MATERIALS

| Part            | Material                       |
|-----------------|--------------------------------|
| Body            | Bronze (C84400)                |
| Union Tailpiece | Brass                          |
| Union Nut       | Brass                          |
| Check Modules   | Acetal/Nitrile/Stainless Steel |
| Spacer          | Glass-Filled Noryl®            |
| O-Ring          | EPDM                           |

Contact local water authorities for installation/service requirements.



### FACTORY CODE

See Page 70 For Flow Curves

| 4FP3 X                              | X  | X  | X   |
|-------------------------------------|--|--|---|
| INLET CONNECTION <sup>1</sup>       | INLET SIZE   | OUTLET SIZE  | OUTLET CONNECTION <sup>1</sup>                |
| A = FNPT<br>C = Female Meter Thread | 5 = 1"<br>6 = 1-1/4"<br>(Meter thread sizing for 1" meter) | 5 = 1"<br>6 = 1-1/4"<br>(Meter thread sizing for 1" meter) | A = FNPT<br>B = MNPT<br>E = Male Meter Thread |

Notes:

<sup>1</sup> Not all inlet and outlet combinations are available. Please contact Conbraco Customer Service for availability.

Example:

**4FP3A55A** = 1" Dual Check FNPT Inlet x 1" FNPT outlet



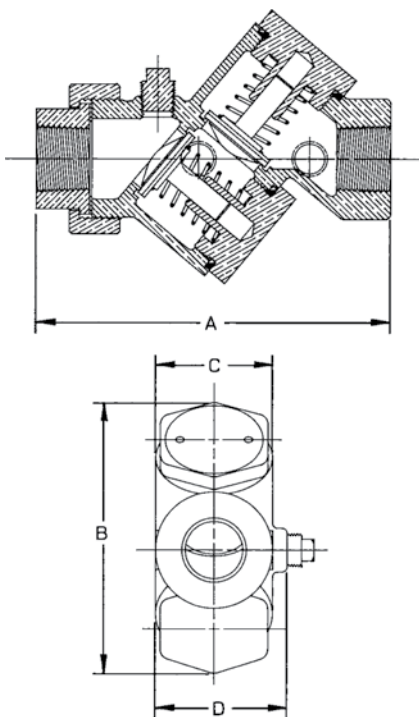
# BACKFLOW PREVENTION CATALOG

## Dual Check Backflow Preventers

### DUC 40 SERIES



Sizes 1/2", 3/4", 1"



### DUAL CHECK VALVE

The Apollo Series DUC 40 Dual Check Valve prevents backflow by either backpressure or back-siphonage resulting from a cross-connection between potable water lines and substances that are objectionable, but not health-hazards.

#### FEATURES

- In-line repairable
- Low pressure loss
- Corrosion resistant
- Compact and lightweight
- Independently-acting check valves
- **Lead-Free** option
- ASSE 1024
- CSA B64.6
- Available in standard and swivel types
- MADE IN THE USA
- 5 year, domestic warranty

#### PERFORMANCE RATING

Maximum Operating Pressure 175 psi

Temperature Range 33° F - 180° F

#### APPROVALS

ASSE® 1024 and CSA® B64.6

#### MATERIALS

| Part       | Material                    |
|------------|-----------------------------|
| Body       | Bronze (C84400 - LF C89836) |
| Caps       | Brass                       |
| Springs    | Stainless Steel             |
| Seat Discs | EPDM                        |

#### DIMENSIONS

| Size                             | DUC4012<br>40-3x3-3x | DUC4034<br>40-3x4-4x | DUC401<br>40-3x5-5x |
|----------------------------------|----------------------|----------------------|---------------------|
| A                                | 4-3/8                | 4-3/8                | 4-3/8               |
| B                                | 3-1/2                | 3-1/2                | 3-1/2               |
| C                                | 1-1/2                | 1-1/2                | 1-1/2               |
| Wt. (Lbs.)                       | 2                    | 2                    | 2.1                 |
| Wt. (w/test cocks & ball valves) | 4                    | 4.6                  | 6.4                 |

### FACTORY CODE

See Page 69 For Flow Curves

| 40 [X] 3                          | X   | X                              | X  | X  |
|-----------------------------------|---|--------------------------------|--|--|
|                                   | INLET CONNECTION <sup>1,2</sup>   | INLET AND OUTLET SIZE          | OUTLET CONNECTION <sup>1,2</sup>                       | OPTIONS (CAN BE COMBINED)  |
| 40 = Standard<br>40LF = Lead Free | A = FNPT<br>C = Female Meter Thread<br>S = Female Meter Swivel<br>Z = Female BSPP | 3 = 1/2"<br>4 = 3/4"<br>5 = 1" | A = FNPT<br>C = Female Meter Thread<br>F = Female BSPP | TP = w/Test Ports Drilled, Tapped w/Plugs<br>TC = w/3 1/8"x1/4" Test Cocks |

Notes:

<sup>1</sup> For meter threads, order one size larger than meter size.

<sup>2</sup> Not all inlet and outlet combinations are available. Please contact Conbraco Customer Service for availability.

\* Standard body not drilled & tapped for testcocks.

Example:

**40 355 4A** = 1" Dual Check Female with Meter Swivel Inlet (for connection to 3/4" meter) x 3/4"



For additional information, submittal sheets and manuals, visit [www.apollovalves.com](http://www.apollovalves.com)

Customer Service (704) 841-6000

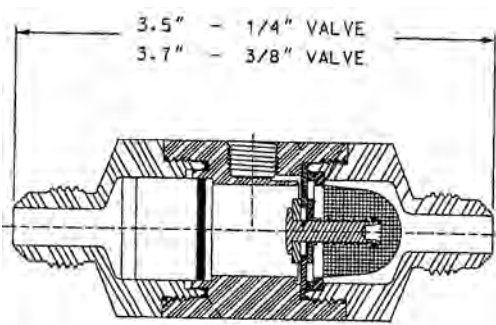
# BACKFLOW PREVENTION CATALOG

## Carbonated Beverage Backflow Preventers

### CBBP SERIES



Sizes 1/4", 3/8"



### CARBONATED BEVERAGE BACKFLOW PREVENTER

The Apollo CBBP Series Carbonated Beverage Backflow Preventer (CBBP) is designed to prevent the contamination of the potable water supply due to backflow when installed on water distribution lines serving beverage dispensing equipment. The device consists of two independently acting check valves biased to a normally closed position. A normally open atmospheric port is located between the check valves. During backflow conditions, the port vents gases and/or liquids. Additionally, the CBBP is equipped with a 100 mesh integral strainer screen at the inlet. All wetted areas of the device are non-toxic, corrosion resistant, and approved for use with potable water. The CBBP is suitable for supply pressures to 150 psig and water temperatures from 33° to 130° F.

#### OPERATION

Under static (non-flowing) conditions, the check valves remain in the closed position. When a valve is opened downstream (i.e. a drink is delivered from the beverage dispensing unit), the check valves open and permit the flow of water. Under backflow conditions, the diaphragm seat on the first check lifts and permits flow through the atmospheric port located between the two check valves. The strainer insures debris does not enter the carbonator.

#### FEATURES

- Compact Design
- Lowest head loss
- Atmospheric vent provides indication of problems
- Integral strainer for equipment protection
- **Lead Free**
- Available in SAE & NPT connections
- Repairable check assemblies
- Non-metallic body for corrosion resistance
- CSA Certified to ANSI/NSF-61
- ASSE1022
- 5 year, domestic warranty

#### MATERIALS

| Part           | Material            |
|----------------|---------------------|
| End Cap        | Acetal              |
| Strainer       | PVC/Stainless Steel |
| O-ring         | Nitrile             |
| Downstream     | Nitrile/Stainless   |
| Check Valve    | Steel/Acetal        |
| Upstream Check | EPDM/Stainless      |
| Valve Body     | Acetal              |

Contact local water authorities for installation/service requirements.

#### DIMENSIONS

See Page 70 For Flow Curves

| CBBP Size | Connection Sizing |           | Wt./Ea |
|-----------|-------------------|-----------|--------|
| 1/4"      | 7/16"-20 UNF      | SAE Flare | .19    |
| 3/8"      | 5/8"-18 UNF       | SAE Flare | .19    |
| 3/8"      | 3/8" NPT          | Male NPT  | .19    |

#### MODEL NO. CBBP14

#### FACTORY CODE

| 4C10 X   | X                           |
|----------|-----------------------------|
| SIZE     | INLET AND OUTLET CONNECTION |
| 1 = 1/4" | 01 = Flare                  |
| 2 = 3/8" | 02 = MNPT (3/8" only)       |

# BACKFLOW PREVENTION CATALOG



## Hose Connection Vacuum Breakers Backflow Preventers

### HBV2 SERIES



Optional Satin Chrome Finish (shown)

3/4"  
Apollo International

### 3/4" HOSE CONNECTION VACUUM BREAKERS

Apollo's HBV Hose Connection Vacuum Breakers are designed to prevent cross-connection caused by back-siphonage. They consist of a single check valve with atmospheric vacuum breaker vent. They feature a break-away set-screw for tamper-proof protection. They are not suitable for continuous pressure applications.

#### OPERATION

At no flow situations, the check disc seats against the diaphragm with the atmospheric vent open. This prevents back-siphonage or backflow of water. At flow conditions, the spring-loaded check disc opens, thus allowing flow of water through the device and at the same time the diaphragm seals the atmospheric vent.

#### INSTALLATION

It should only be installed in areas where spillage of water could not cause damage. For permanent installation, screw device directly into faucet, firmly hand tighten and turn set-screw in until head breaks off.

#### FEATURES

- Maximum Working Pressure 125 psig
- Maximum Temperature 180°F.
- ASSE1011
- CSA B64.2

#### DIMENSIONS

| Factory No. | Model No. | Finish       | Wt./Ea |
|-------------|-----------|--------------|--------|
| 38-314-AS   | HBV234    | Satin Brass  | .17    |
| 38-314-CS   | HBVC234   | Satin Chrome | .17    |

38-314 shipped in 12 pcs./box

### HBVAF2 SERIES



3/4"  
Apollo International

### 3/4" ANTI-FREEZE HOSE CONNECTION VACUUM BREAKERS

The Apollo Series HBVB Anti-Freeze Hose Connection Vacuum Breaker is especially designed to prevent back-siphonage on wall and yard hydrants. It features a break-away set-screw for tamper-proof protection and automatic drain for protection against freezing conditions when hose is removed. It is not suitable for continuous pressure applications.

#### OPERATION

The principle of operation is similar to the HCVB Series except it has an automatic draining feature. When the hose is removed, the internal mechanism opens to drain water from the unit and the hose bibb to help prevent water from freezing inside the unit.

#### INSTALLATION

It should only be installed in areas where spillage of water could not cause damage. For permanent installation, screw device directly into faucet, firmly hand tighten and turn set-screw in until head breaks off.

#### FEATURES

- Maximum Working Pressure 125 psig
- Maximum Temperature 180°F.
- ASSE1011

#### DIMENSIONS

| Factory No. | Model No. | Finish      | Wt./Ea |
|-------------|-----------|-------------|--------|
| 38-414-AS   | HBVAF2    | Satin Brass | .37    |

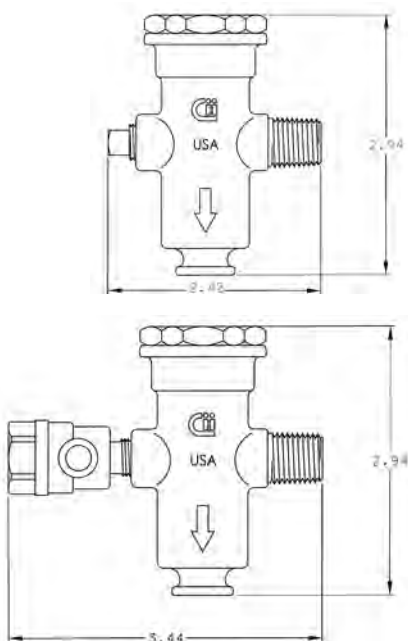




# BACKFLOW PREVENTION CATALOG

## Freeze Protection Valve

### FPV SERIES



### FREEZE PROTECTION VALVE

The Apollo Series FPV Freeze Protection Valve protects backflow preventers from freezing when installed in accordance with manufacturer's instructions. All internal parts of the Freeze Protection Valve are replaceable.

#### OPERATION

During flow conditions, the Freeze Protection Valve shall be drip-tight during above-freezing normal operating conditions. The Freeze Protection Valve shall be suitable for normal operating pressures of 20 to 175 psig.

#### FEATURES

- Installs easily on all backflow preventers
- Ease of repair with available repair kit
- 175 psig maximum operating pressure
- Corrosion resistant
- 1/4" male pipe thread inlet port
- Available with 1/8" male x 1/4" female test cock
- Discharge port accommodates 5/8" I.D. hose
- **Lead-Free** option
- Mechanical operating principle
- Nominal start to open temperature of 35°F
- Maximum temperature of 180°F
- Compact design
- Patented design
- IAPMO listed
- US patent #6,374,849
- 5 year, domestic warranty

### MATERIALS

| Part            | Material                    |
|-----------------|-----------------------------|
| Body            | Bronze (C84400 / LF C89836) |
| Cap             | Brass                       |
| Spring Guide    | Brass                       |
| Spring          | Stainless Steel             |
| Cap O-Ring      | Buna-N                      |
| Guide O-Ring    | Buna-N                      |
| Thermal Element | Copper/Stainless Steel/EPDM |

Contact local water authorities for installation/service requirements.

### DIMENSIONS

| Net Weight Each   | Lbs. |
|-------------------|------|
| Model 40-000-FPV1 | .70  |
| Model 40-000-FPV2 | .77  |

### MODEL NUMBERS

|  |
|--|
| Model 40-000-FPV1                      |
| Model 40-000-FPV2 – w/test cock        |
| Model 40LF-000-FPV1                    |
| Model 40LF-000-FPV2F – w/SAE test cock |

### FACTORY CODE

| 40 [X] 000       | FPV X                                   |
|------------------|---|
|                  | OPTIONS                                 |
| 40 = Standard    | 1 = w/1/8" NPT plug                     |
| 40LF = Lead Free | 2 = w/1/8" male x 1/4" female test cock |
|                  | 2F = SAE test cock                      |
|                  | R = Repair kit* for FPV1 and FPV2       |

\* Repair kit includes: Thermal element, spring, spring guide, two O-rings (all internal parts)

# BACKFLOW PREVENTION CATALOG

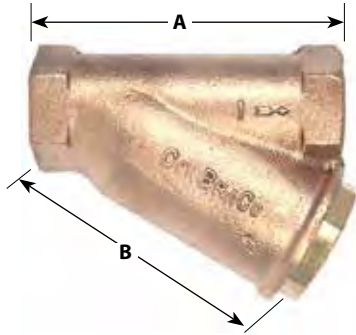
## "Y" Strainers Backflow Preventers

### YB STRAINER SERIES

### Y STRAINER

#### FEATURES

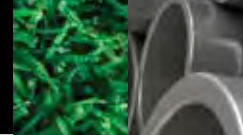
- Maximum protection capability against foreign particles in piping systems and process equipment.
- Cast bronze body (C84400 / LF C89836)
- 304 Stainless Steel screen
- Sizes 1/4" thru 1/2" comes standard with 50 mesh (0.009" wire)
- Sizes 3/4" thru 2" comes standard with 20 mesh (0.016" wire)
- **Lead-Free** option
- Other screen sizes available (contact customer service)
- Operating pressure to 400 psig WOG
- Removable self-aligning screen
- 5 year, domestic warranty
- 400 Series is female x male NPT (3/4" & 1" only)



### DIMENSIONS

| Factory No. | Model No. | Size In.       | A (In.) | A (mm.) | B (In.) | B (mm.) | Cap Tapping Suffix -02 | Wt. Lbs. | Wt. Kgs. |
|-------------|-----------|----------------|---------|---------|---------|---------|------------------------|----------|----------|
| 59-001-01   | YB14      | 1/4 NPT        | 2       | 50      | 1-1/4   | 32      | 1/8 NPT                | .42      | .19      |
| 59-002-01   | YB38      | 3/8 NPT        | 2-11/16 | 68      | 2       | 50      | 1/4 NPT                | .79      | .36      |
| 59-003-01   | YB12      | 1/2 NPT        | 2-11/16 | 68      | 2       | 50      | 1/4 NPT                | .75      | .34      |
| 59-004-01   | YB34      | 3/4 NPT        | 3-7/8   | 98      | 3-1/4   | 83      | 1/2 NPT                | 1.85     | .84      |
| 59-005-01   | YB1       | 1 NPT          | 4-3/4   | 121     | 4       | 100     | 3/4 NPT                | 2.76     | 1.25     |
| 59-006-01   | YB114     | 1-1/4 NPT      | 5-1/8   | 130     | 4-1/4   | 108     | 3/4 NPT                | 3.58     | 1.62     |
| 59-007-01   | YB112     | 1-1/2 NPT      | 5-3/4   | 146     | 5       | 127     | 1 NPT                  | 5.41     | 2.45     |
| 59-008-01   | YB2       | 2 NPT          | 6-3/4   | 171     | 6       | 150     | 1-1/4 NPT              | 7.47     | 3.39     |
| 59-404-01   | YBM34     | 3/4 F x MNPT   | 5-3/8   | 136     | 3-1/4   | 83      | 1/2 NPT                | 2.0      | .9       |
| 59-405-01   | YBM1      | 1 F x MNPT     | 5-3/4   | 146     | 4       | 100     | 3/4 NPT                | 2.95     | 1.3      |
| 59LF-001-01 | YB14LF    | 1/4 NPT        | 2       | 50      | 1-1/4   | 32      | 1/8 NPT                | .42      | .19      |
| 59LF-002-01 | YB38LF    | 3/8 NPT        | 2-11/16 | 68      | 2       | 50      | 1/4 NPT                | .79      | .36      |
| 59LF-003-01 | YB12LF    | 1/2 NPT        | 2-11/16 | 68      | 2       | 50      | 1/4 NPT                | .75      | .34      |
| 59LF-004-01 | YB34LF    | 3/4 NPT        | 3-7/8   | 98      | 3-1/4   | 83      | 1/2 NPT                | 1.85     | .84      |
| 59LF-005-01 | YB1LF     | 1 NPT          | 1-3/4   | 121     | 4       | 100     | 3/4 NPT                | 2.76     | 1.25     |
| 59LF-006-01 | YB114LF   | 1-1/4 NPT      | 5-1/8   | 130     | 4-1/4   | 108     | 3/4 NPT                | 3.58     | 1.62     |
| 59LF-007-01 | YB112LF   | 1-1/2 NPT      | 5-3/4   | 146     | 5       | 127     | 1 NPT                  | 5.41     | 2.45     |
| 59LF-008-01 | YB2LF     | 2 NPT          | 6-3/4   | 171     | 6       | 150     | 1-1/4 NPT              | 7.47     | 3.39     |
| 59LF-404-01 | YBM34LF   | 3/4 NPT x MNPT | 5-3/8   | 136     | 3-1/4   | 83      | 1/2 NPT                | 2.0      | .9       |
| 59LF-405-01 | YBM1LF    | 1 NPT x MNPT   | 5-3/4   | 146     | 4       | 100     | 3/4 NPT                | 2.95     | 1.3      |

# BACKFLOW PREVENTION CATALOG



## "Y" Strainers Backflow Preventers

### YSCF SERIES

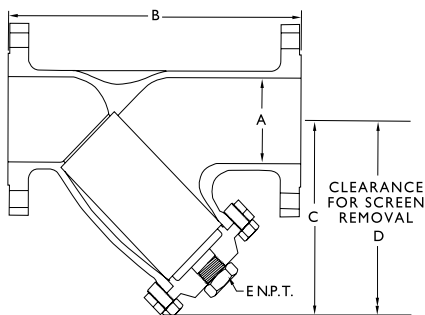
### YSCF SERIES FLANGED, STYLE 125YF, CLASS 125 WYE STRAINERS



(Optional Epoxy Coating Shown)

#### FEATURES

- Iron strainers are complete with Flat Face flanges in accordance with ASME B16.1.
- Strainer body meets applicable ASME Standard
- One piece cast body.
- Strainers equipped with bolted cover flange that utilize a flat gasket seal
- Low pressure drop.
- Upper and lower machined seats.
- 304 SS perforated screens are standard.
- Drain/Blow-off connection furnished with plug as standard
- 2-1/2" thru 3" come standard with .045 perforated screens
- 4" thru 10" come standard with .125 perforated screens
- Other screen sizes available (contact customer service)
- Generous screen area and properly proportioned straining chamber to minimize initial pressure drop while maximizing time between cleanings.
- Compact end to end dimension.
- FDA Epoxy coated and lined option (add "E" Suffix)



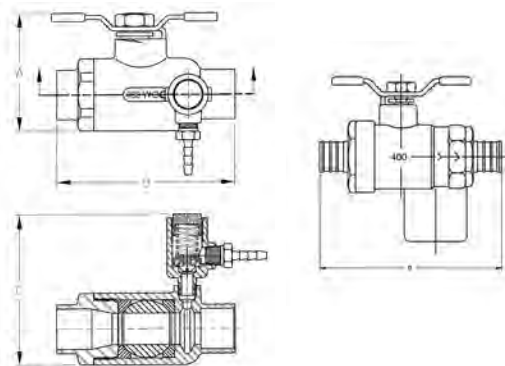
### DIMENSIONS

| Factory No.  | Size   | A (In.) | A (mm.) | B (In.) | B (mm.) | C (In.) | C (mm.) | D (In.) | D (mm.) | E     | Wt. Lbs. | Wt. Kgs. |
|--------------|--------|---------|---------|---------|---------|---------|---------|---------|---------|-------|----------|----------|
| 125YF25P045E | 2-1/2" | 2.50    | 65      | 10.75   | 273     | 8.00    | 200     | 11.25   | 286     | 1     | 35       | 16       |
| 125YF03P045E | 3"     | 3.00    | 80      | 11.50   | 292     | 8.75    | 222     | 12.25   | 311     | 1     | 43       | 20       |
| 125YF04P125E | 4"     | 4.00    | 100     | 13.88   | 353     | 9.50    | 241     | 13.38   | 340     | 1-1/4 | 75       | 34       |
| 125YF06P125E | 6"     | 6.00    | 150     | 18.50   | 470     | 12.63   | 321     | 17.69   | 449     | 1-1/2 | 154      | 70       |
| 125YF08P125E | 8"     | 8.00    | 200     | 21.38   | 543     | 16.38   | 416     | 23.00   | 584     | 1-1/2 | 243      | 110      |
| 125YF10P125E | 10"    | 10.00   | 250     | 26.00   | 660     | 19.00   | 483     | 26.70   | 678     | 2     | 390      | 177      |

# BACKFLOW PREVENTION CATALOG

## Accessories – Backflow Preventers

### EXV SERIES



Relief valve shown rotated 90°. Valve should be assembled w/hose barb pointed out of page.

### THERMAL EXPANSION RELIEF VALVES

The Apollo EXV Thermal Expansion Relief Valves are designed primarily to relieve excessive water pressure build-up caused by thermal expansion.

In a closed hot water piping system, as water is heated, thermal expansion occurs. The increase of pressure will exert unwarranted stress on the system components, which may reach harmful levels well before the emergency setting of the main relief valve is reached. By installing the Series EXV, it will control any amount of expanded water without causing pressure increase to exceed maximum setting.

#### FEATURES

- Prevents excessive pressure build-up
- Protects plumbing fixtures
- Extends water heater life
- Compact and lightweight design
- Economical
- **Lead-Free** option
- Easy to install and requires no special tool
- Corrosion resistant
- 5 year, domestic warranty
- CSA B125.1 & B125.3
- City of Los Angeles

#### DIMENSIONS

| Factory No. | Model No. | A   | B   | C   | Wt./Ea |
|-------------|-----------|-----|-----|-----|--------|
| 78-300      | EXVS34    | 2.6 | 3.9 | 3.2 | 1.5    |
| 78-400      | EXVT34    | 2.5 | 2.7 | 3.4 | 1.1    |
| 78-700      | EXVX34    | 2.5 | 4.0 | 3.9 | 1.32   |

#### FACTORY CODE

| 78 / 78LF X  | X                | X RV                     |
|--------------|------------------|--------------------------|
| SIZE         | PRESSURE SETTING | RELIEF VALVE CONNECTION  |
| 3 = 3/4"     | 0 = 125 psig     | 4 = Hose Barb            |
| 4 = 3/4"     | 1 = 100 psig     | 5 = Pex                  |
| 7 = 3/4" PEX | 2 = 80 psi       | 6 = Comp. Fitting        |
|              |                  | 7 = 1/2" NPT/SWT Fitting |

### EXP SERIES



### EXPANSION TANKS FOR POTABLE SYSTEMS

Designed to protect closed water supply systems, appliances and piping from the hazards of thermal expansion, such as premature water heater failure. Installs easily on direct fired gas, oil and electric hot water heaters and storage tanks. Their pre-pressurized steel design includes an expansion membrane that stops any contact between the water and air in the tank.

#### FEATURES

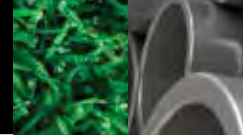
- Ideal for use in dorms, apartments, office buildings and hospitals
- Compatible with most standard water heaters and storage tanks
- Maximum working pressure: 150 psig
- Food quality Chlorobutyl diaphragm
- 100 percent non-metallic non-corrosive water reservoir
- Pre-charge pressure 40 psig
- Field adjustable pre-charge
- ANSI/NSF 61-8, Annex G (**Lead Free**)
- **Made in USA**

#### DIMENSIONS

| Factory No. | Capacity (Gal.) | Exp. Vol (Gal.) | Connection | Height | Diameter | Wt./Ea |
|-------------|-----------------|-----------------|------------|--------|----------|--------|
| 40-XT1-03   | 2               | 1.27            | 3/4 NPT    | 12.5   | 8.25     | 5.5    |
| 40-XT3-03   | 5               | 3.05            | 3/4 NPT    | 14.0   | 11.25    | 8      |
| 40-XT5-03   | 10              | 7.80            | 3/4 NPT    | 15.75  | 15.25    | 20     |



# BACKFLOW PREVENTION CATALOG



## Accessories – Backflow Preventers

### DIFFERENTIAL PRESSURE GAUGE TEST KITS



The Apollo Backflow Preventer Test Kits are compact, lightweight and portable testing devices. They come equipped with a gauge, hoses (with integral filters) and all required adapter fittings. Also included is a flexible or adjustable strap for hanging the gauge, laminated test procedures and a molded plastic carrying case with foam inserts.

#### TK3

These are three-valve test kits used for testing all DCV, RPZ, PVB & SVB backflow preventers.

- Differential pressure type with a dual scale of 0-15 psid/0-100kPa differential pressure range with a  $\pm 0.2$  psig (Descending) accuracy. Maximum working pressure 200 psig.

#### TK5

This is a five-valve test kit used for testing all DCV, RPZ, PVB & SVB backflow preventers.

The five valve test kit is similar to the three valve kit except it has two additional valves that make it possible to bleed lines without disconnecting hoses.

| Factory No. | Model No. | Application             | Wt./Ea |
|-------------|-----------|-------------------------|--------|
| 40-200-TKU  | TK3       | ALL DCV, RPZ, PVB & SVB | 6.5    |
| 40-200-TKSU | TK5       | ALL DCV, RPZ, PVB & SVB | 6.5    |

### TFK SERIES TEST KIT FITTING



Brass fitting which installs onto Backflow Preventer Test Cocks by hand. No tools required. No Teflon® tape to deal with. Provides quicker testing. Sets of three fittings with o-rings for 1/4" SAE connections to the test kits. Packaged in a reclosable plastic bag.

| Size                | Factory No. | Model No. | Backflow Application |
|---------------------|-------------|-----------|----------------------|
| 1/4" SAE x 1/4" NPT | 40-000-TFK  | TFK14     | 1/4" - 2"            |
| 1/4" SAE x 1/2" NPT | 40-001-TFK  | TFK12     | 2-1/2" - 6"          |
| 1/4" SAE x 3/4" NPT | 40-002-TFK  | TFK34     | 8" - 12"             |
| Set of all 3 sizes  | 40-003-TFK  | TFKSET    | 1/4" - 12"           |

### HCPG SERIES PRESSURE GAUGE



### 3/4" HOSE CONNECTION PRESSURE GAUGE

The Apollo Hose Connection Pressure Gauge is designed to measure water pressure through a 3/4" hose thread connection. It consists of an indicator needle to determine maximum pressure.

Ordering No. - W807800 Model No. - HCPG

#### FEATURES

- 2-1/2" face dial
- 0 - 300 psig pressure range
- Swivel type 3/4" hose connection
- Adjustable indicator needle
- Temperature range = 50°F - 130°F
- Wt./Ea. 46 Lbs.

### ST1 SERIES SIGHT TUBE



### ST1 SERIES SIGHT TUBE

Used in USC testing procedures. The kit allows for visual inspection during testing, provides an extension to the check valve body and offers quick connection with the 90° elbow. Provides means to static test double check backflow preventers.

Ordering No. - 40-200-ST Model No. - ST1

### 40 200 BV BLEED VALVE



### BLEED VALVE

Test valve used to provide accurate readings in field test of the Double Check Valve backflow preventers. Recommended in USC testing procedures. Benefits include quick connections, quick bleed off of testing lines and useful in tight locations.

# BACKFLOW PREVENTION CATALOG

## Accessories – Backflow Preventers

### VALVE SETTERS



Apollo Valve 4An Setters are specifically designed to match the mounting dimensions of the 4An products. The three-piece configuration simplifies installation and eliminates the need for thrust blocks between the elbows. All hardware is stainless steel and the entire unit is FDA Epoxy coated inside and out. The mechanical joint connections are to AWWA C153 and the flanges are to ANSI B16.1 Class 125.

### MATERIALS

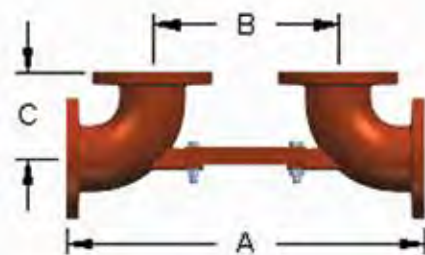
| Part                   | Material  |
|------------------------|---|
| Setter Body            | Ductile Iron, ASTM A536                                 |
| Setter Center Brace    | Hot Rolled Steel ASTM A36                               |
| Setter Bolts & Nuts    | Stainless Steel   |
| Setter & Brace Coating | Fusion-Bonded Epoxy FDA Compliant Internal and External |

Contact local water authorities for installation/service requirements.

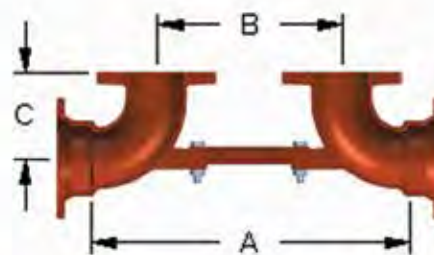
### FACTORY CODE

| 4An 00 X   | X  |
|------------|--|
| SIZE       | TYPE                                     |
| 9 - 2-1/2" | F = Flange x Flange                      |
| 0 - 3"     | MJF = Mechanical Joint x Flange          |
| A - 4"     | MJ = Mechanical Joint x Mechanical Joint |
| C - 6"     |  |
| E - 8"     |  |
| G - 10"    |  |
| H - 12"    |  |

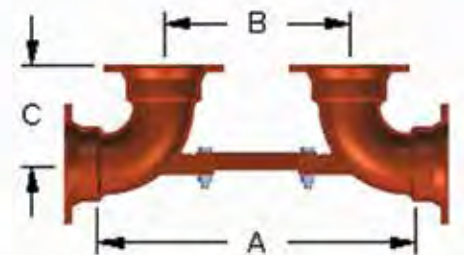
\* Flange x Flange only



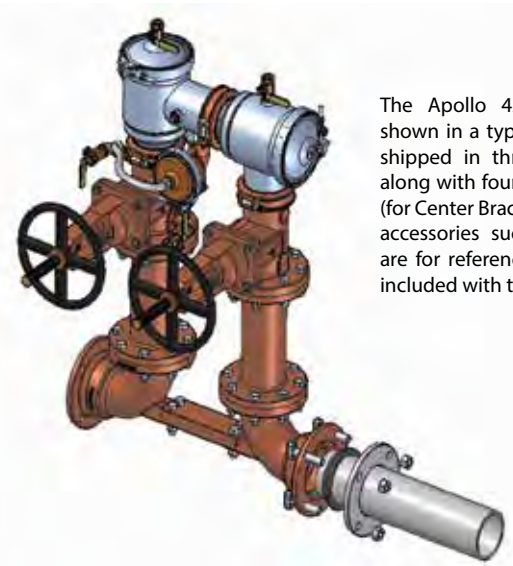
Flange x Flange  
(F)



Mechanical Joint x Flange  
(MJF)



Mechanical Joint x Mechanical Joint  
(MJ)



The Apollo 4An Valve Setter is shown in a typical installation. It is shipped in three separate pieces along with four nuts and four bolts (for Center Brace). Mechanical Joint accessories such as those shown are for reference only and are not included with the 4An Valve Setter.

### DIMENSIONS

| Size   | Model | A      | B      | C     | Wt./Ea |
|--------|-------|--------|--------|-------|--------|
| 2-1/2" | F     | 23-1/2 | 12-1/2 | 5-1/2 | 43.7   |
| 3"     | F     | 23-1/2 | 12-1/2 | 5-1/2 | 50.4   |
|        | MJF   | 21-1/2 | 12-1/2 | 5-1/2 | 50.4   |
|        | MJ    | 21-1/2 | 12-1/2 | 7     | 50.7   |
| 4"     | F     | 27     | 14     | 6-1/2 | 87.1   |
|        | MJF   | 24     | 14     | 6-1/2 | 71.1   |
|        | MJ    | 24     | 14     | 7-1/2 | 65.1   |
| 6"     | F     | 32     | 16     | 8     | 147.5  |
|        | MJF   | 29     | 16     | 8     | 115.3  |
|        | MJ    | 29     | 16     | 9     | 107.1  |
| 8"     | F     | 36-1/2 | 18-1/2 | 9     | 236.30 |
|        | MJF   | 33-1/2 | 18-1/2 | 9     | 216.40 |
|        | MJ    | 33-1/2 | 18-1/2 | 10    | 193.20 |
| 10"    | F     | 43.0   | 21     | 11.0  | 388    |
| 12"    | F     | 50-3/4 | 26-3/4 | 12    | 547    |

# BACKFLOW PREVENTION CATALOG

## Backflow Shut-Off Valves



Flange x Groove  
Shown

### NON-RISING STEM (NRS)

| Size   | Flg x Flg | Flg x Grv | Grv x Grv |
|--------|-----------|-----------|-----------|
| 2-1/2" | W-6785-00 | W-5310-00 | W-9369-00 |
| 3"     | W-6786-00 | W-5311-00 | W-9370-00 |
| 4"     | W-6743-00 | W-5312-00 | W-9371-00 |
| 6"     | W-6744-00 | W-5313-00 | W-9372-00 |
| 8"     | W-6827-00 | W-5314-00 | W-9373-00 |
| 10"    | W-6858-00 | W-5315-00 | N/A       |
| 12"    | W-9529-00 | N/A       | N/A       |

AWWA



Groove x Groove  
Shown

### OUTSIDE STEM & YOKE (OS&Y)

| Size   | Flg x Flg | Flg x Grv | Grv x Grv |
|--------|-----------|-----------|-----------|
| 2-1/2" | W-6789-00 | W-4733-00 | W-5282-00 |
| 3"     | W-6790-00 | W-4734-00 | W-5283-00 |
| 4"     | W-6824-00 | W-4735-00 | W-5284-00 |
| 6"     | W-6825-00 | W-4736-00 | W-5285-00 |
| 8"     | W-6826-00 | W-4737-00 | W-5286-00 |
| 10"    | W-6859-00 | W-4738-00 | W-5321-00 |
| 12"    | W-9528-00 | N/A       | N/A       |

AWWA, UL Listed, ULC Listed, FM Approved



Flange x Flange  
Shown

### POST INDICATOR (PI)

| Size | Flg x Flg | Flg x Grv | Grv x Grv |
|------|-----------|-----------|-----------|
| 3"   | W-4478-00 | W-9125-00 | W-9236-00 |
| 4"   | W-4366-00 | W-9126-00 | W-9237-00 |
| 6"   | W-4367-00 | W-9127-00 | W-9238-00 |
| 8"   | W-4368-00 | W-9128-00 | W-9239-00 |
| 10"  | W-4369-00 | W-9129-00 | N/A       |

UL Listed, ULC Listed, FM Approved



Groove x Groove  
Only

### MONITORED BUTTERFLY (3G)

| Size   | Grv x Grv |
|--------|-----------|
| 2-1/2" | W-5244-00 |
| 3"     | W-5245-00 |
| 4"     | W-5246-00 |
| 6"     | W-5247-00 |
| 8"     | W-5248-00 |
| 10"    | W-5249-00 |

UL Listed, ULC Listed, FM Approved



FNPT x FNPT

### BRONZE BALL VALVE (BV)

| Size             | Inlet<br>FxFNPT | Outlet<br>FxFNPT | Inlet<br>FxFNPT    | Outlet<br>FxFNPT |
|------------------|-----------------|------------------|--------------------|------------------|
| <b>4A Series</b> |                 |                  | <b>4ALF Series</b> |                  |
| 1/2"             | 77B-103-85      | 77C-103-A4       | 77BLF-103-85       | 77CLF-103-85     |
| 3/4"             | 77B-104-83      | 77C-104-83       | 77BLF-104-83       | 77CLF-104-83     |
| 1"               | 77B-105-83      | 77C-105-83       | 77BLF-105-83       | 77CLF-105-83     |
| 1-1/4"           | 77B-106-84      | 77C-106-84       | 77BLF-106-84       | 77CLF-106-84     |
| 1-1/2"           | 77B-107-84      | 77C-107-84       | 77BLF-107-84       | 77CLF-107-84     |
| 2"               | 77B-108-84      | 77C-108-84       | 77BLF-108-84       | 77CLF-108-84     |

| Size                               | Inlet<br>FxFNPT | Outlet<br>FxFNPT | Inlet<br>FxFNPT                      | Outlet<br>FxFNPT |
|------------------------------------|-----------------|------------------|--------------------------------------|------------------|
| <b>4A Series Union Ball Valves</b> |                 |                  | <b>4ALF Series Union Ball Valves</b> |                  |
| 1/2"                               | 77B-303-85      | 77C-303-85       | 77BLF-303-85                         | 77CLF-303-85     |
| 3/4"                               | 77B-304-83      | 77C-304-83       | 77BLF-304-83                         | 77CLF-304-83     |
| 1"                                 | 77B-305-83      | 77C-305-83       | 77BLF-305-83                         | 77CLF-305-83     |
| 1-1/4"                             | 77B-306-84      | 77C-306-84       | 77BLF-306-84                         | 77CLF-306-84     |
| 1-1/2"                             | 77B-307-84      | 77C-307-84       | 77BLF-307-84                         | 77CLF-307-84     |
| 2"                                 | 77B-308-84      | 77C-308-84       | 77BLF-308-84                         | 77CLF-308-84     |



### TEST COCKS FOR SMALL BACKFLOW

| Male x FNPT                      | LEAD FREE<br>Male x FNPT           |
|----------------------------------|------------------------------------|
| 1/8" x 1/4"<br><b>78 290 01</b>  | 1/8" x 1/4"<br><b>78LF 290 01</b>  |
| 1/4" x 1/4"<br><b>78 291 01</b>  | 1/4" x 1/4"<br><b>78LF 291 01</b>  |
| Male x SAE Flare                 | LEAD FREE<br>Male x SAE Flare      |
| 1/8" x Flare<br><b>78 292 01</b> | 1/8" x Flare<br><b>78LF 292 01</b> |
| 1/4" x Flare<br><b>78 293 01</b> | 1/4" x Flare<br><b>78LF 293 01</b> |



### TEST COCKS FOR LARGE BACKFLOW

| 2-1/2" to 4" SS Assemblies |            |
|----------------------------|------------|
| SS Cover Testcock          | 77CLF803A0 |
| SS Body Testcock           | 77CLF80310 |
| Shutoff Valves T/C         | 77CLF10310 |
| 6" SS Assemblies           |            |
| SS Cover Testcock          | 77CLF804A0 |
| SS Body Testcock           | 77CLF80410 |
| Shutoff Valves T/C         | 77CLF10410 |
| 8" SS Assemblies           |            |
| Cover & Body T/C           | 77CLF80410 |
| Shutoff Valves T/C         | 77CLF10410 |
| 10" and 12" Assemblies     |            |
| All Testcocks              | 77CLF10410 |

# BACKFLOW PREVENTION CATALOG

## Accessories – Backflow Preventers

### MODEL RP 40 & RP 4A BACKFLOW PREVENTERS

### AIR GAP DRAIN

For installation with Conbraco's RP 4A, RPDA 4A, RP 4An, RPDA 4An, and RP 40S Series Reduced Pressure Principle backflow preventers.

The Apollo Air Gap Drain (AGD) is designed to funnel minor relief valve discharges, due to line pressure fluctuations and /or minor check valve fouling, into the drainage system. Drain piping is easily attached to the drain's threaded bottom.

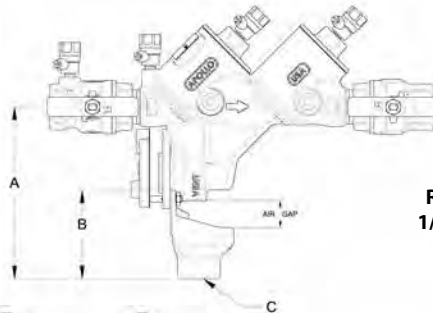
*Note: The AGD is designed to collect expected minor discharges due to fouled checks or pressure fluctuations but not the full discharge capacity of the relief valve.*



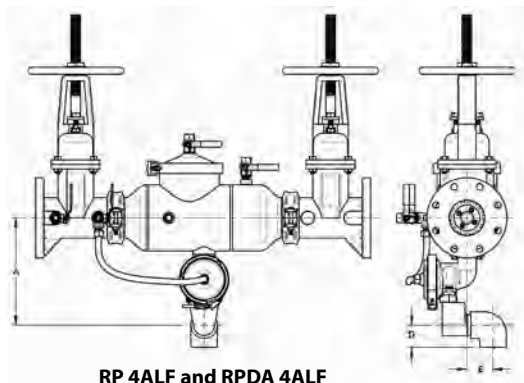
### DIMENSIONS

See Page 72 For Relief Valve Discharge Rates

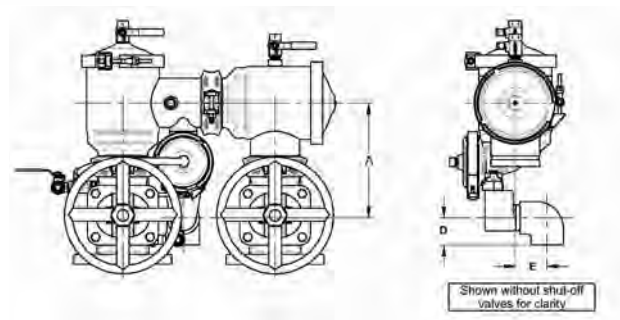
| RP4A Series         | AGD4A Model No. | A (In.) | A (mm.) | B (In.) | B (mm.) | Exit Piping Threads<br>C | OD of C     | D (In.) | D (mm.) | E (In.) | E (mm.) | Wt. Lbs. | Wt. Kgs. |
|---------------------|-----------------|---------|---------|---------|---------|--------------------------|-------------|---------|---------|---------|---------|----------|----------|
| 1/2", 3/4", 1"      | AGD4A1          | 6.5     | 165     | 3.4     | 86      | 1" FNPT                  | 1-1/4" Pipe |         |         |         |         | .1       | .05      |
| 1-1/4" - 1-1/2"     | AGD4A112        | 8.5     | 216     | 4.1     | 104     | 1-1/2" FNPT              | 2" Pipe     |         |         |         |         | .20      | .10      |
| 2"                  | AGD4A2          | 10.0    | 254     | 5.3     | 135     | 2" FNPT                  | 2-1/2" Pipe |         |         |         |         | .35      | .16      |
| 2-1/2"              | AGD4A6          | 11.28   | 287     |         |         | 2" MNPT                  | 2" FNPT     | 2.34    | 59      | 2.78    | 71      | 1.27     | .58      |
| 3"                  | AGD4A6          | 11.28   | 287     |         |         | 2" MNPT                  | 2" FNPT     | 2.34    | 59      | 2.78    | 71      | 1.27     | .58      |
| 4"                  | AGD4A6          | 12.02   | 305     |         |         | 2" MNPT                  | 2" FNPT     | 2.34    | 59      | 2.78    | 71      | 1.27     | .58      |
| 6"                  | AGD4A6          | 13.32   | 338     |         |         | 2" MNPT                  | 2" FNPT     | 2.34    | 59      | 2.78    | 71      | 1.27     | .58      |
| 8"                  | AGD4A8          | 21.3    | 541     | 9.1     | 231     | 2-1/2" NPT               | 3" Pipe     |         |         | 1.05    | .48     |          |          |
| 10"                 | AGD4A12IN       | 26.3    | 668     | 7.8     | 198     | 3" NPT                   | 4"          |         |         |         |         | 4.0      | 1.8      |
| 12"                 | AGD4A12IN       | 26.3    | 668     | 7.8     | 198     | 3" NPT                   | 4"          |         |         |         |         | 4.0      | 1.8      |
| <b>RP4An Series</b> |                 |         |         |         |         |                          |             |         |         |         |         |          |          |
| 2-1/2"              | AGD4A6          | 10.87   | 276     |         |         | 2" MNPT                  | 2" FNPT     | 2.34    | 59      | 2.78    | 71      | 1.27     | .58      |
| 3"                  | AGD4A6          | 10.87   | 276     |         |         | 2" MNPT                  | 2" FNPT     | 2.34    | 59      | 2.78    | 71      | 1.27     | .58      |
| 4"                  | AGD4A6          | 10.51   | 267     |         |         | 2" MNPT                  | 2" FNPT     | 2.34    | 59      | 2.78    | 71      | 1.27     | .58      |
| 6"                  | AGD4A6          | 11.76   | 299     |         |         | 2" MNPT                  | 2" FNPT     | 2.34    | 59      | 2.78    | 71      | 1.27     | .58      |
| 8"                  | AGD4A8          | 19.1    | 485     | 9.1     | 231     | 2-1/2" NPT               | 3" Pipe     |         |         |         |         | 1.05     | .48      |
| 10"                 | AGD4A12IN       | 22.7    | 577     | 7.8     | 198     | 3" NPT                   | 4"          |         |         |         |         | 4.0      | 1.8      |
| 12"                 | AGD4A12IN       | 23.3    | 591     | 7.8     | 198     | 3" NPT                   | 4"          |         |         |         |         | 4.0      | 1.8      |



RP-4A  
1/2" - 2"



RP 4ALF and RPDA 4ALF



RP 4AnLF and RPDA 4AnLF



# BACKFLOW PREVENTION CATALOG



## Available Assembly Shut-Off Valve Options

**Part #**  
**Option**

**Model #**  
**Option**

**Less Shut-Off Valves**

-01 -LS



**Part #**  
**Option**

**Model #**  
**Option**

**OS&Y Flange x OS&Y Groove**

-07 -OFG



**NRS Flange x NRS Flange**

-02 -NF



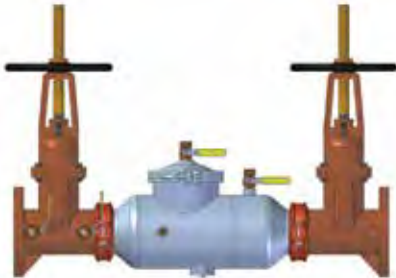
**OS&Y Groove x OS&Y Groove**

-08 -OG



**OS&Y Flange x OS&Y Flange**

-03 -OF



**Monitored Butterfly Groove x Monitored Butterfly Groove**

-09 -BG



**OS&Y Flange x Monitored Butterfly Grooved**

-04 -OFBG



**OS&Y Flange x Post Indicator Groove**

(PI not available in 2-1/2")

-010 -OFPIG



**OS&Y Flange x Post Indicator Flange**

(PI not available in 2-1/2")

-06 -OFPIF



**NRS Groove x NRS Groove**

-011 -NG



# BACKFLOW PREVENTION CATALOG

## Available Assembly Shut-Off Valve Options

**Part #**  
**Option**

**Model #**  
**Option**

**NRS Flanged x NRS Groove**

-012 -NFG



**Part #**  
**Option**

**Model #**  
**Option**

**OS&Y Groove x Post Indicator Groove**

-018 -09PIG

(PI not available in 2-1/2")



**Post Indicator Flanged x Monitored Butterfly Groove**

-013 -PIFBVG



**Monitored Butterfly Groove x Post Indicator Groove**

-019 -BVGPIG

(PI not available in 2-1/2")



**Post Indicator Flange x Post Indicator Flanged**

-014 -PIF

(PI not available in 2-1/2")



**Post Indicator Flange x OS&Y Flange**

-020 -PIFOF

(PI not available in 2-1/2")



**Monitored Butterfly Groove x Post Indicator Flange**

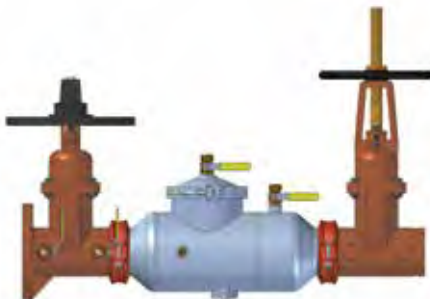
-016 -BVGPIF



**Post Indicator Flange x OS&Y Groove**

-017 -FPIOG

(PI not available in 2-1/2")



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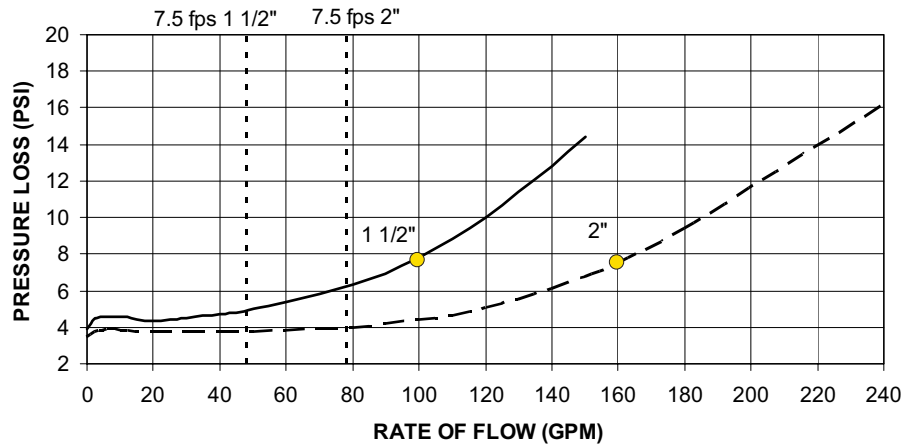
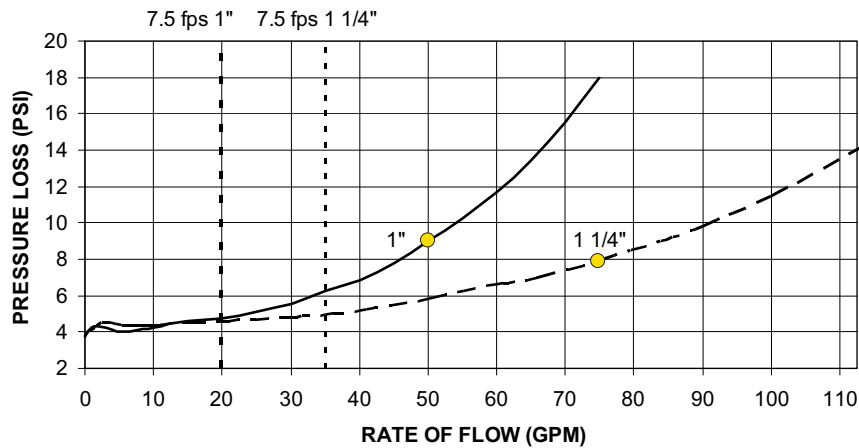
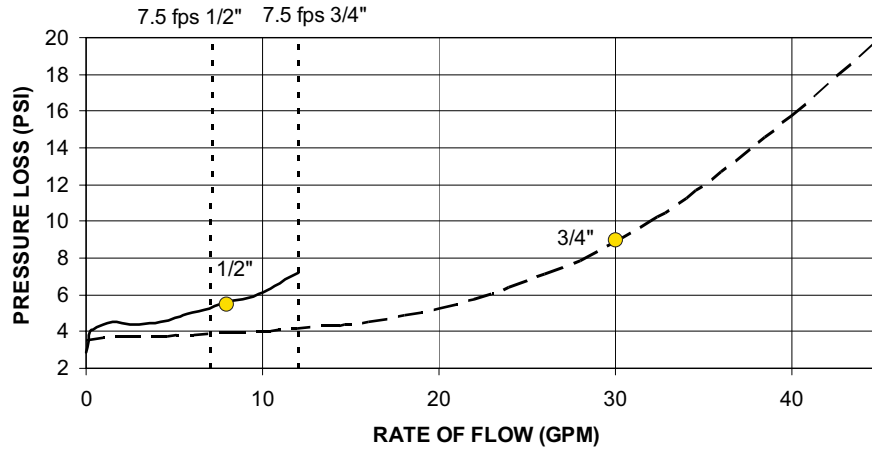
# BACKFLOW PREVENTION CATALOG

## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

### DOUBLE CHECK VALVES

#### DC 4ALF



● Meter Rated Flow



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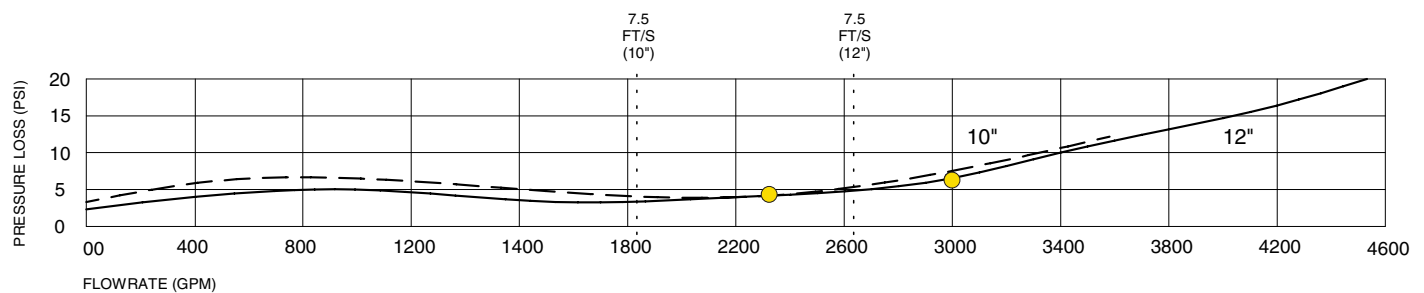
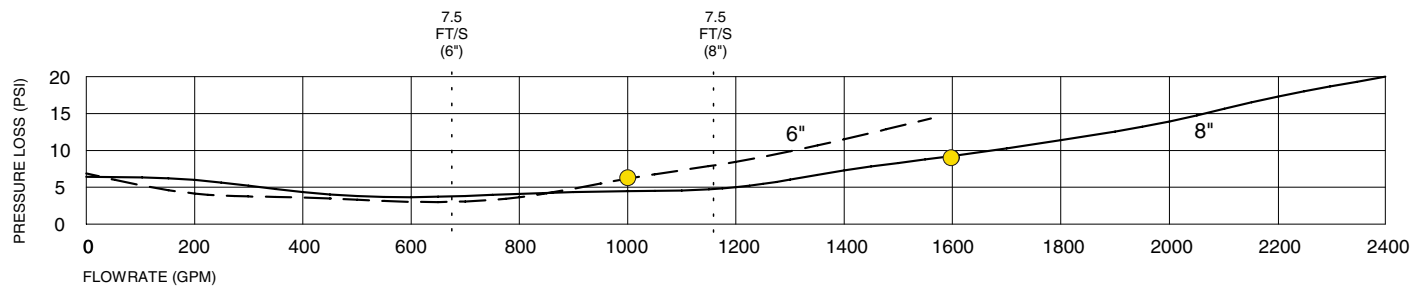
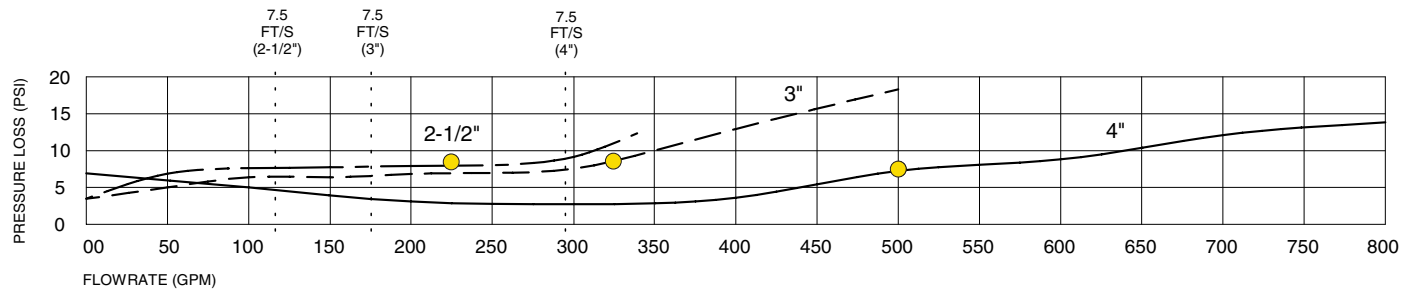
# BACKFLOW PREVENTION CATALOG

## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

### DOUBLE CHECK VALVES

#### DC 4ALF



● Meter Rated Flow



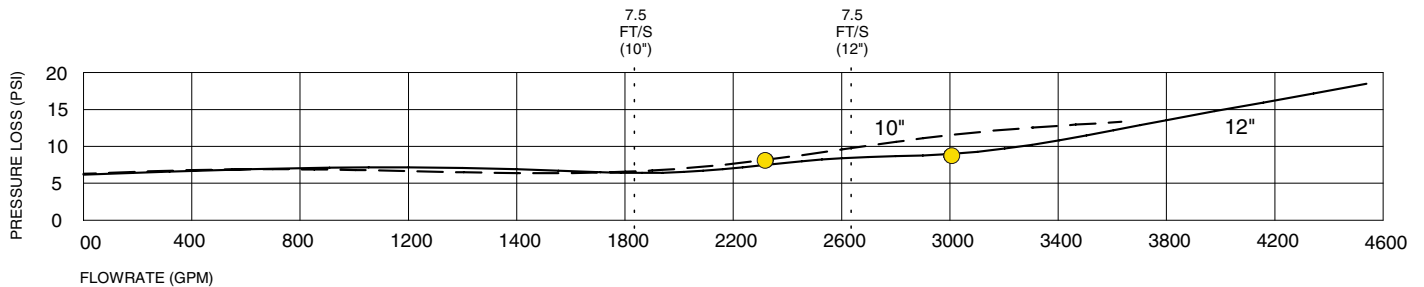
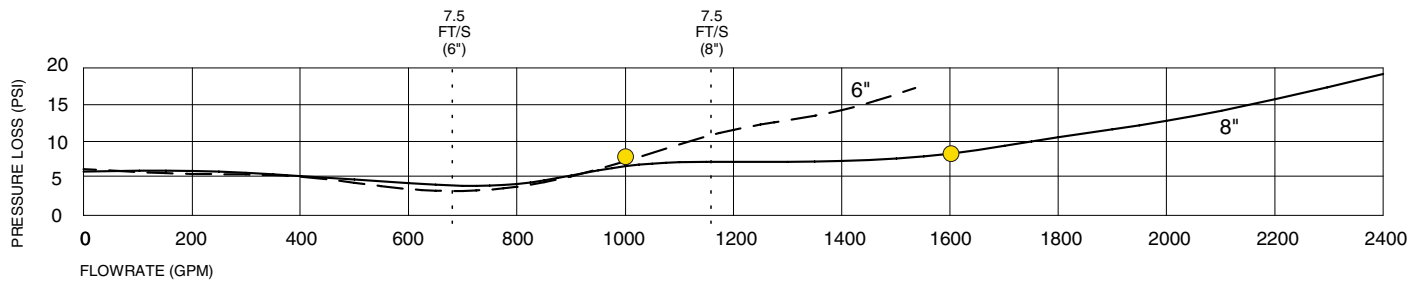
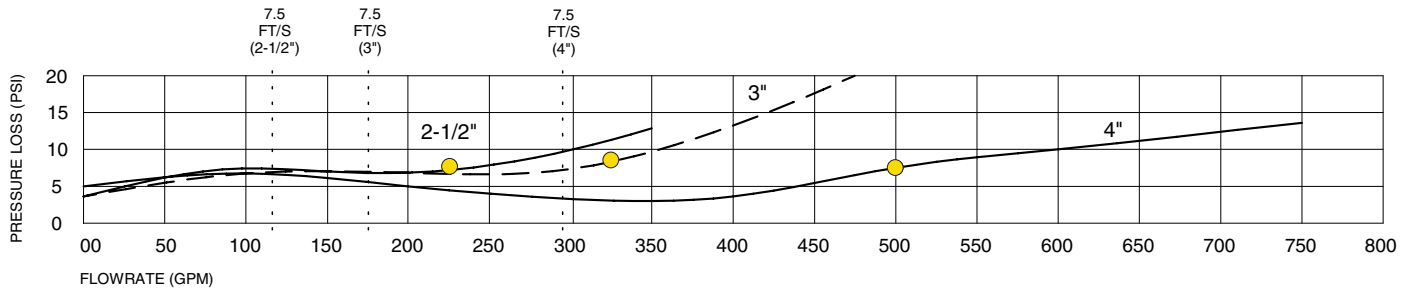
# BACKFLOW PREVENTION CATALOG

## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

### DOUBLE CHECK VALVES

#### DC 4AnLF



● Meter Rated Flow



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# BACKFLOW PREVENTION CATALOG

## Flow Curves

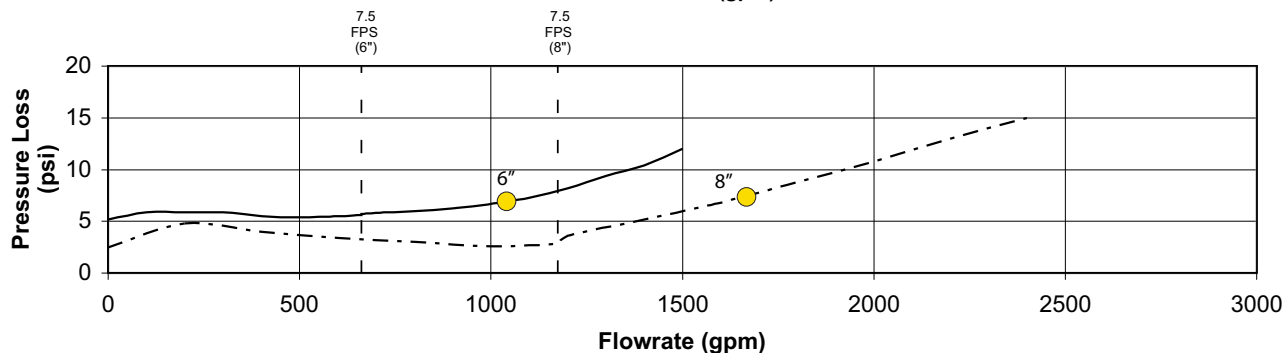
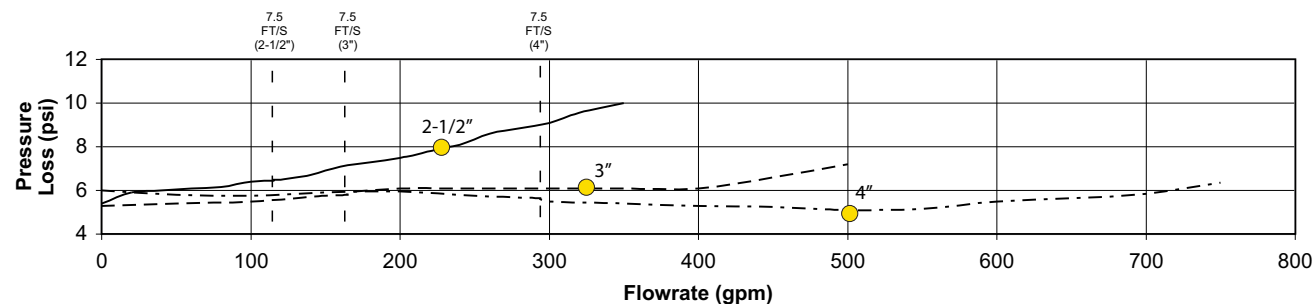
**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

### DOUBLE CHECK ASSEMBLIES

#### DC 4SG

### DOUBLE CHECK DETECTOR ASSEMBLIES

#### DCDA 4SG



### DOUBLE CHECK ASSEMBLIES

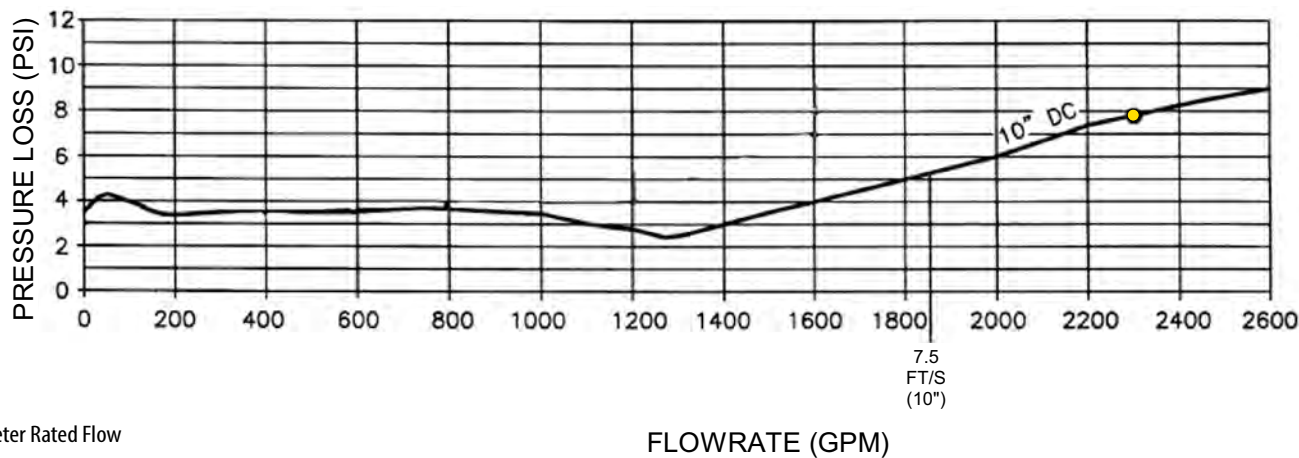
#### DC 4S (10"- Flanged Internal Connections Only)

### DOUBLE CHECK DETECTOR ASSEMBLIES

#### DCDA 4S



10"



● Meter Rated Flow

FLOWRATE (GPM)

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# BACKFLOW PREVENTION CATALOG

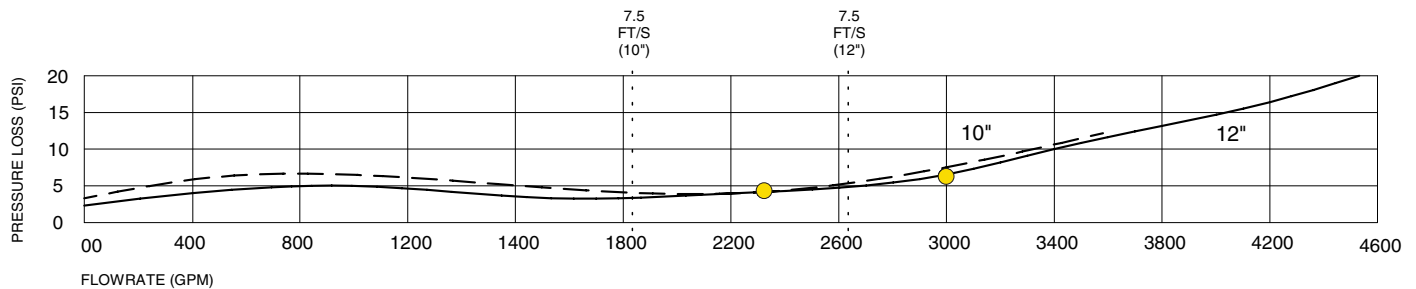
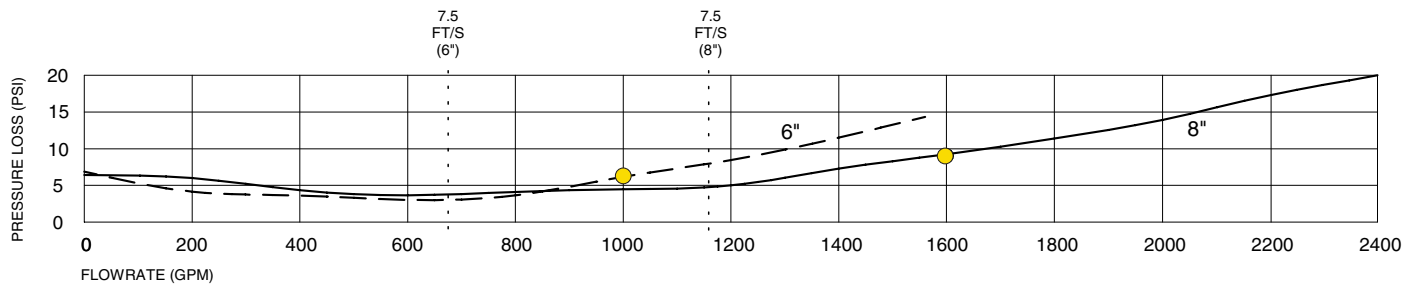
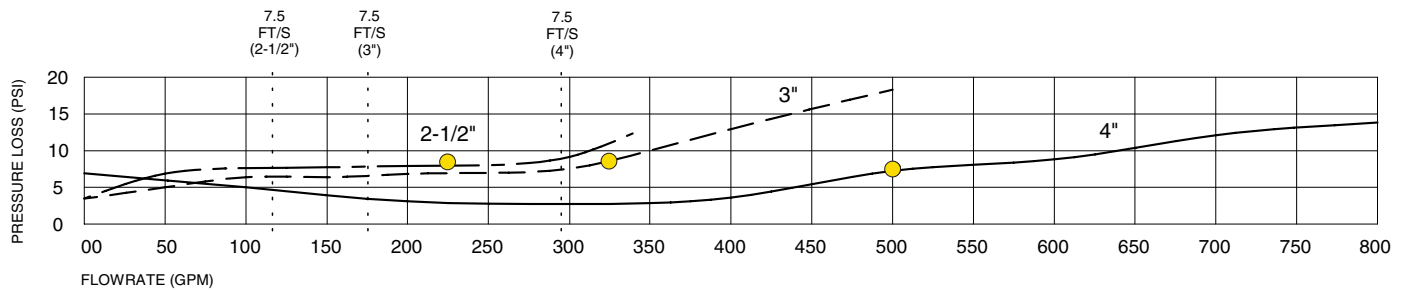
## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

### DOUBLE CHECK DETECTOR ASSEMBLIES

**DCDA 4ALF**

**DCDA2 4ALF**



● Meter Rated Flow



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# BACKFLOW PREVENTION CATALOG

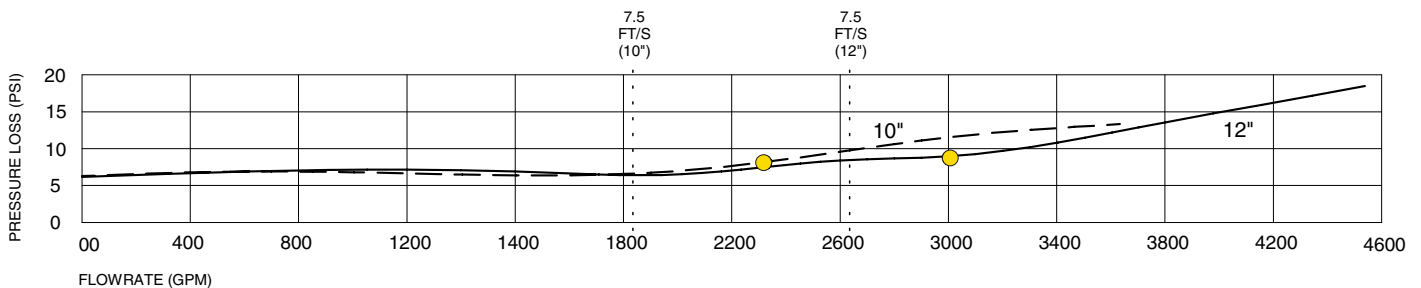
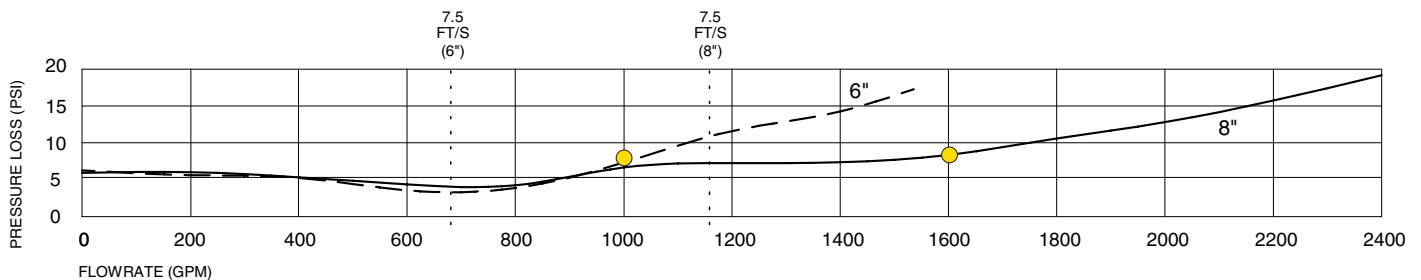
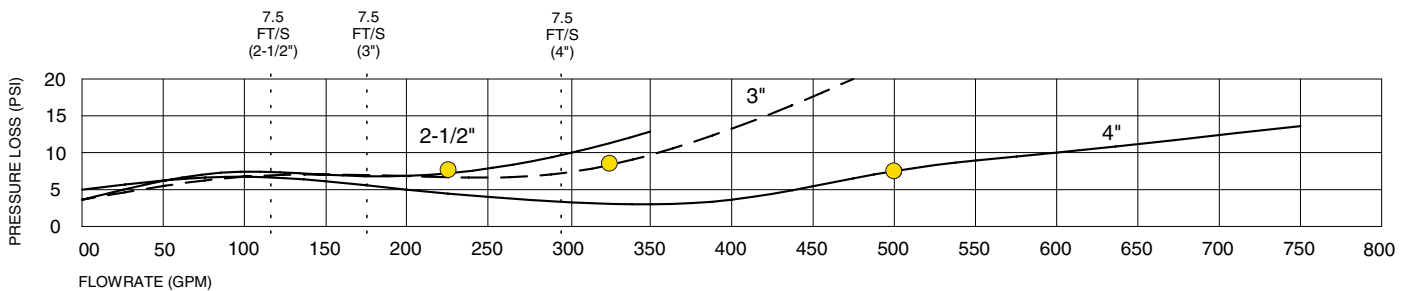
## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

### DOUBLE CHECK DETECTOR ASSEMBLIES

**DCDA 4AnLF**

**DCDA2 4AnLF**



● Meter Rated Flow

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# BACKFLOW PREVENTION CATALOG

## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

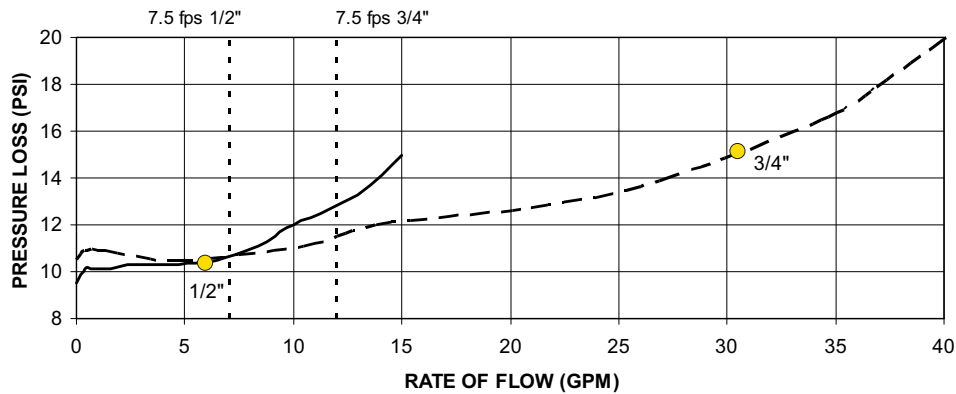
### REDUCED PRESSURE PRINCIPLE

RP 4A

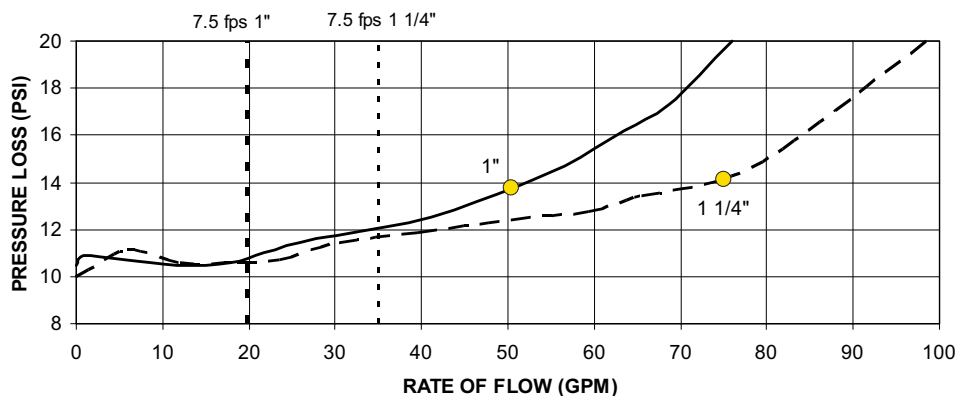
RP 4ALF



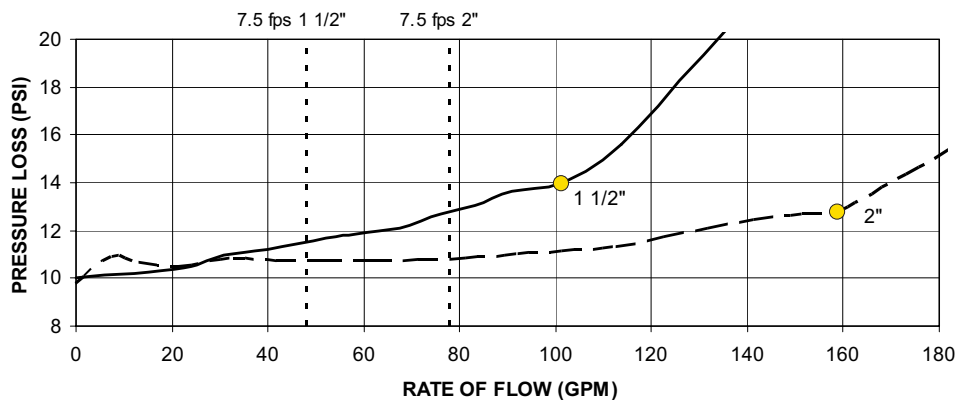
RP4A



RP4A



RP4A



● Meter Rated Flow

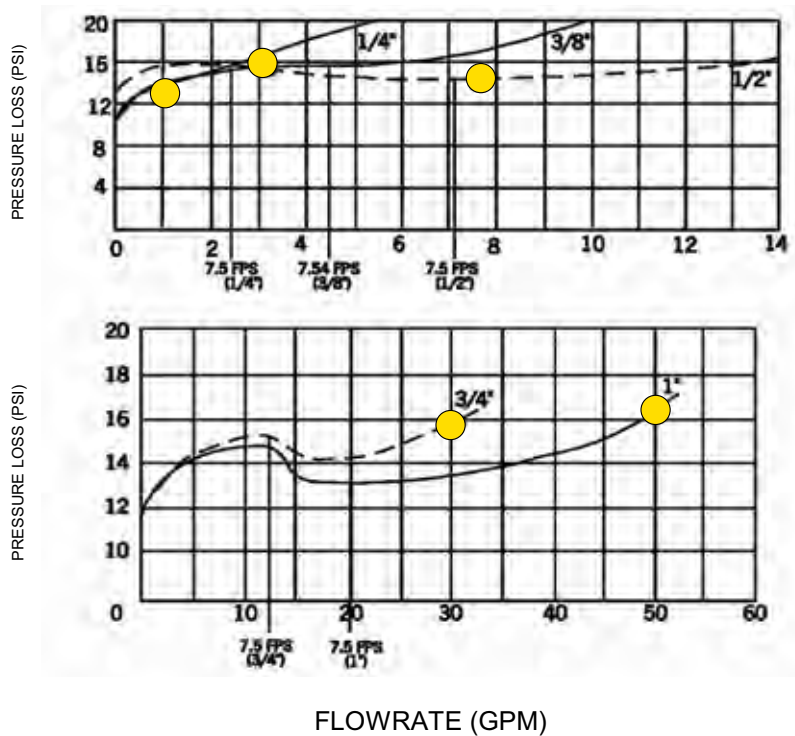
# BACKFLOW PREVENTION CATALOG

## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

### REDUCED PRESSURE PRINCIPLE

#### RP 40S



● Meter Rated Flow

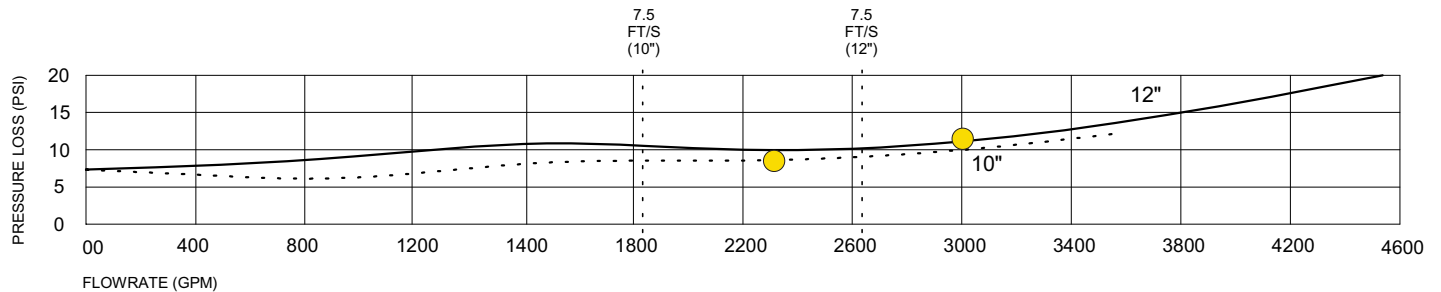
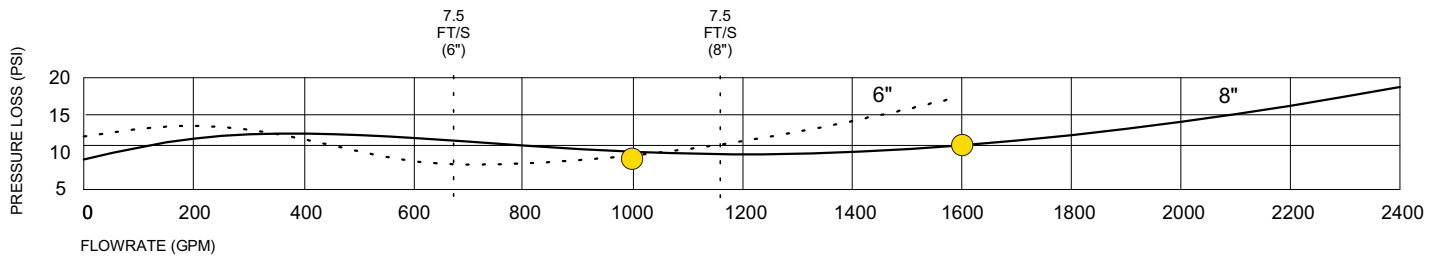
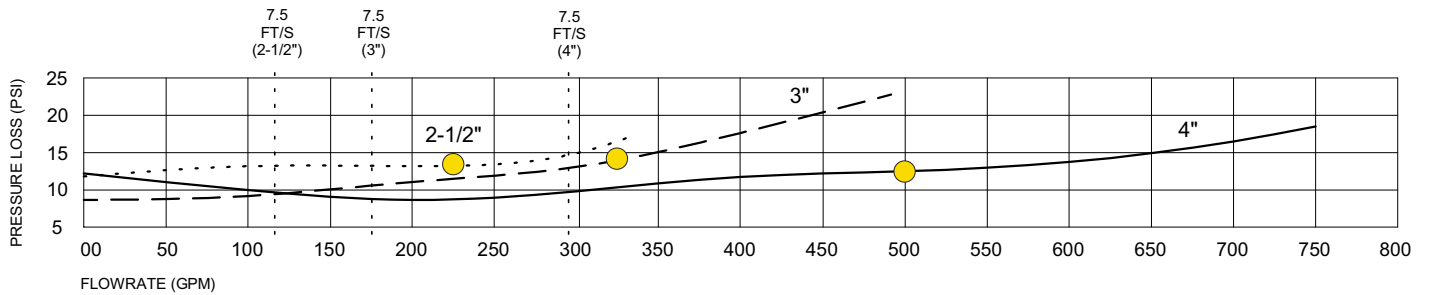
# BACKFLOW PREVENTION CATALOG

## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

### REDUCED PRESSURE PRINCIPLE

#### RP 4ALF



● Meter Rated Flow



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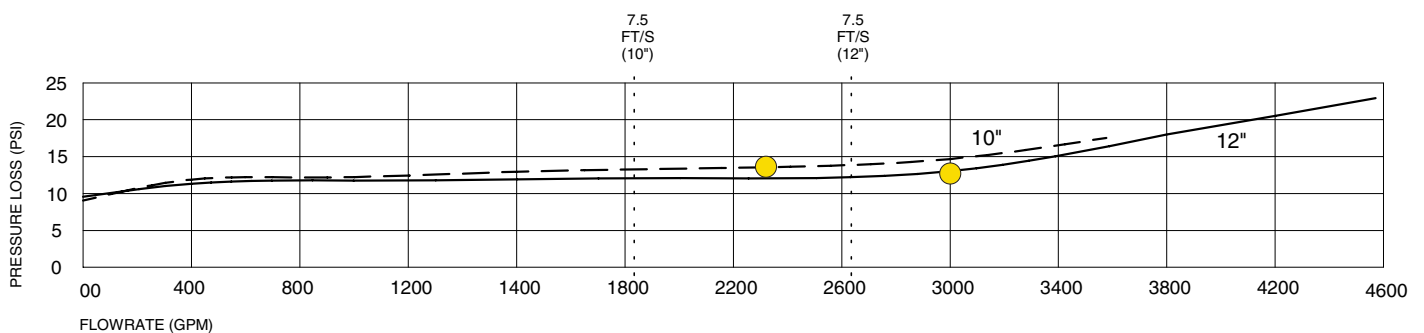
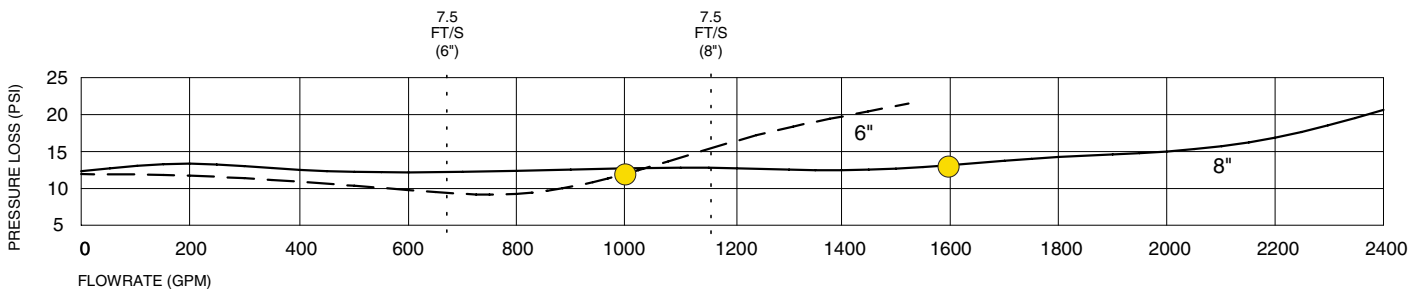
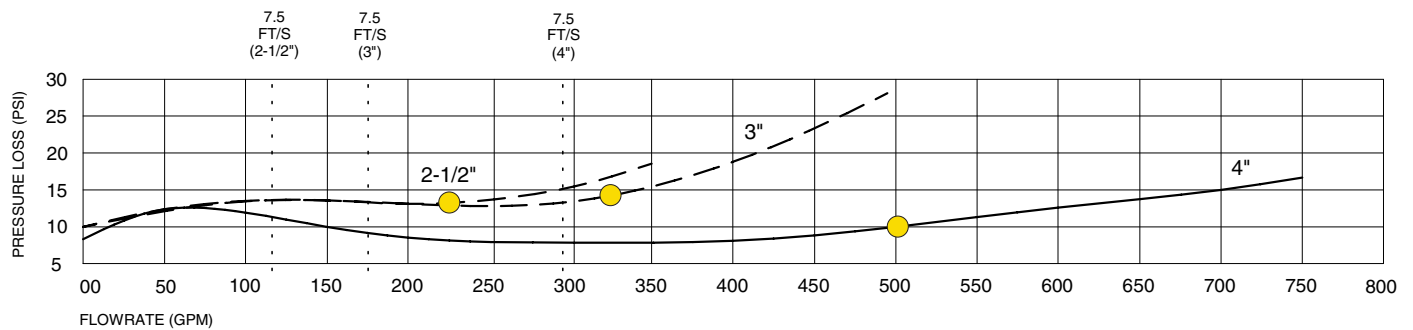
# BACKFLOW PREVENTION CATALOG

## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

### REDUCED PRESSURE PRINCIPLE

#### RP 4AnLF



● Meter Rated Flow

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# BACKFLOW PREVENTION CATALOG

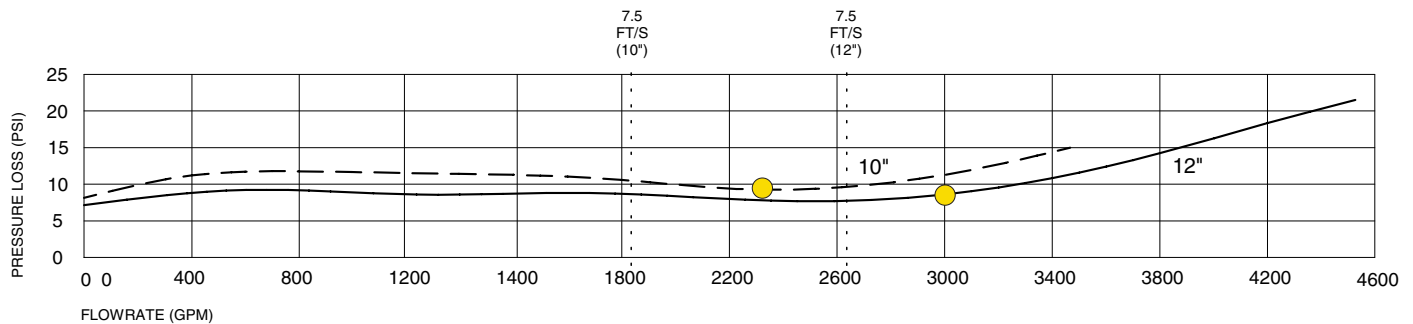
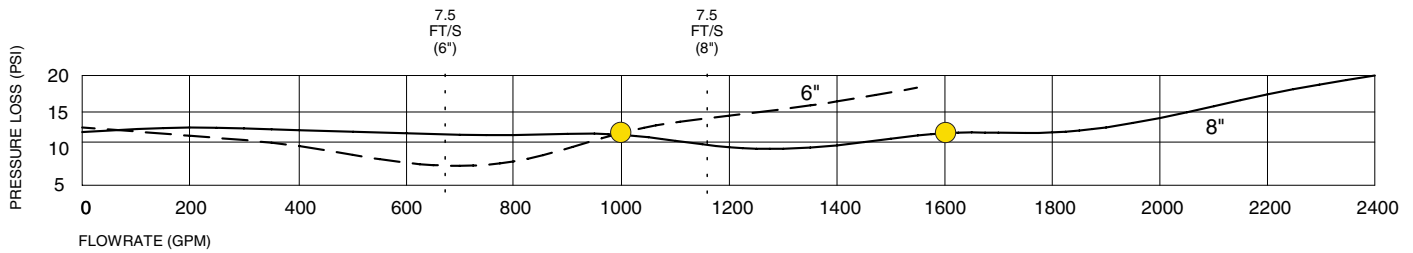
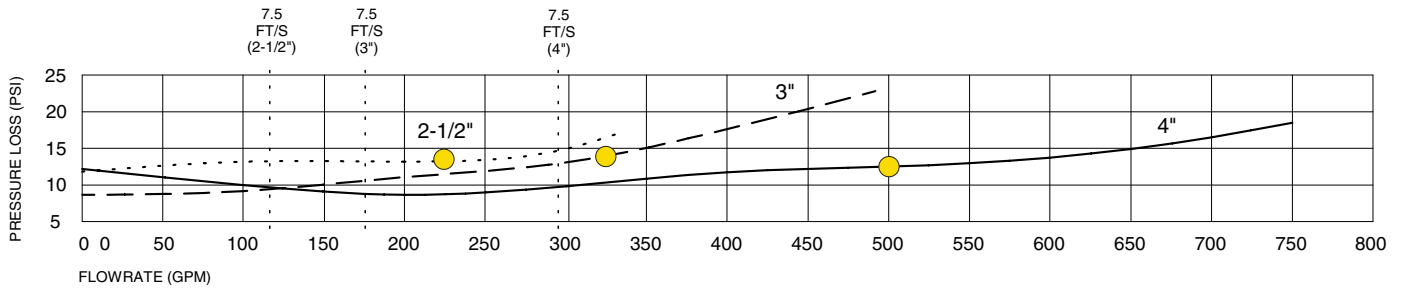
## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

### REDUCED PRESSURE DETECTOR ASSEMBLY

**RPDA 4ALF**

**RPDA2 4ALF**



● Meter Rated Flow



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# BACKFLOW PREVENTION CATALOG

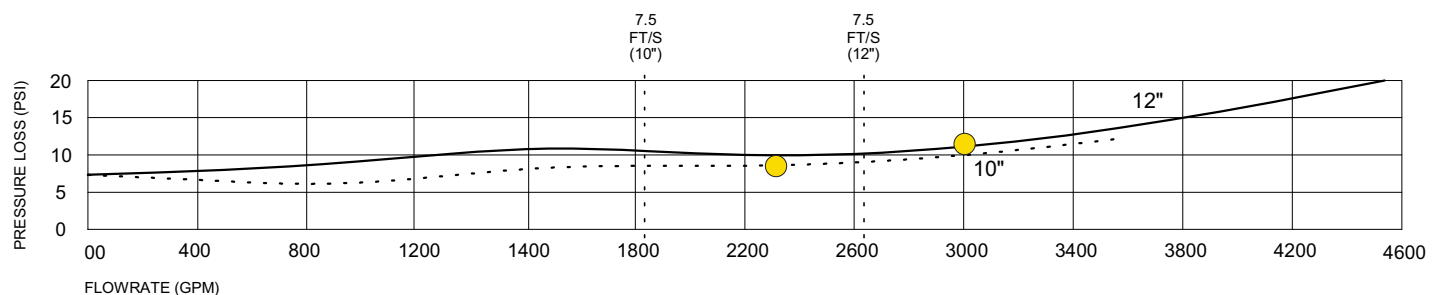
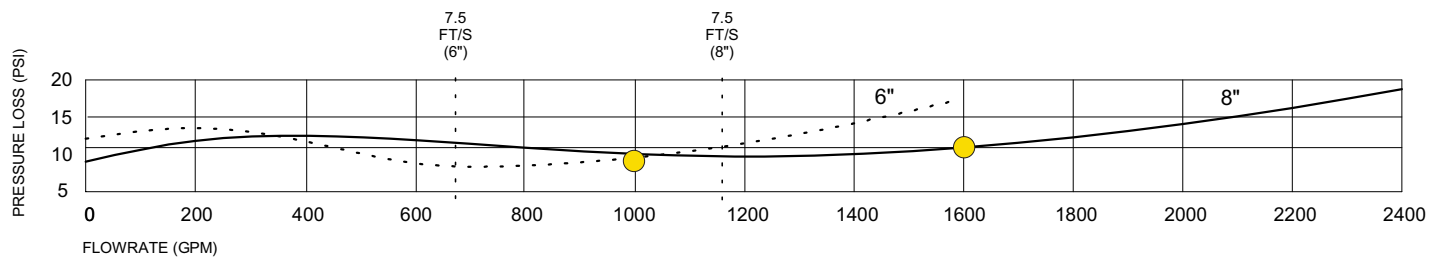
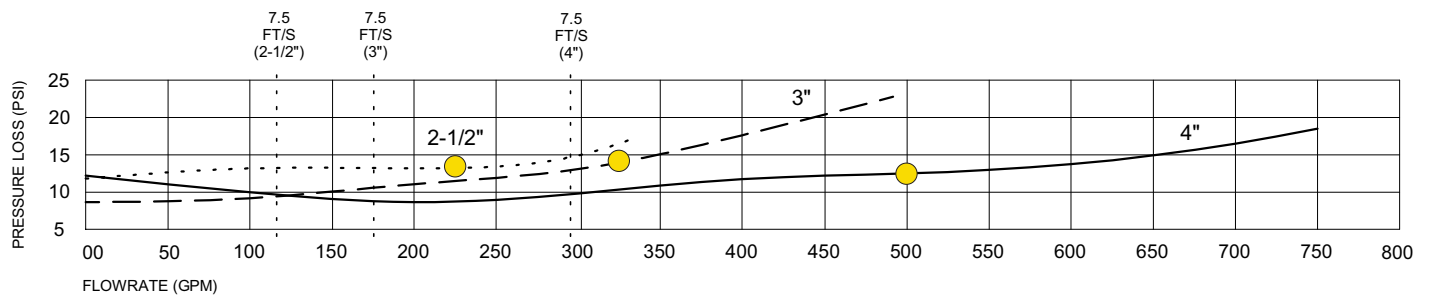
## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

### REDUCED PRESSURE DETECTOR ASSEMBLY

**RPDA 4AnLF**

**RPDA2 4AnLF**



● Meter Rated Flow

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# BACKFLOW PREVENTION CATALOG



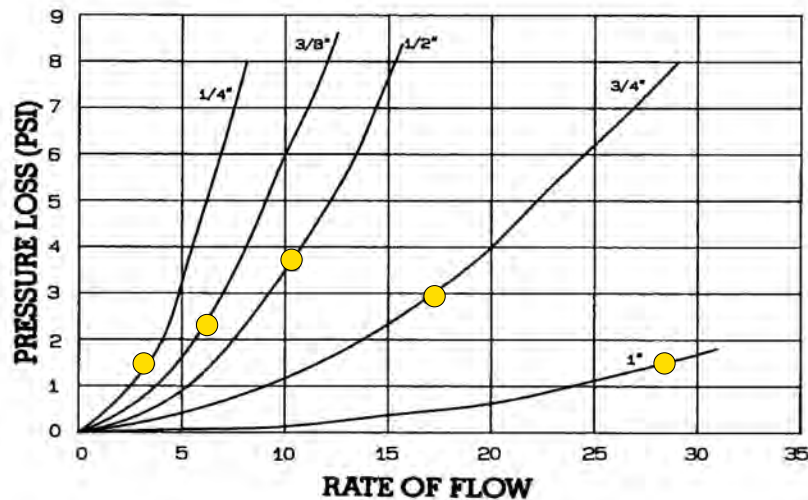
## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

### ATMOSPHERIC TYPE VACUUM BREAKERS

AVB1/AVB2

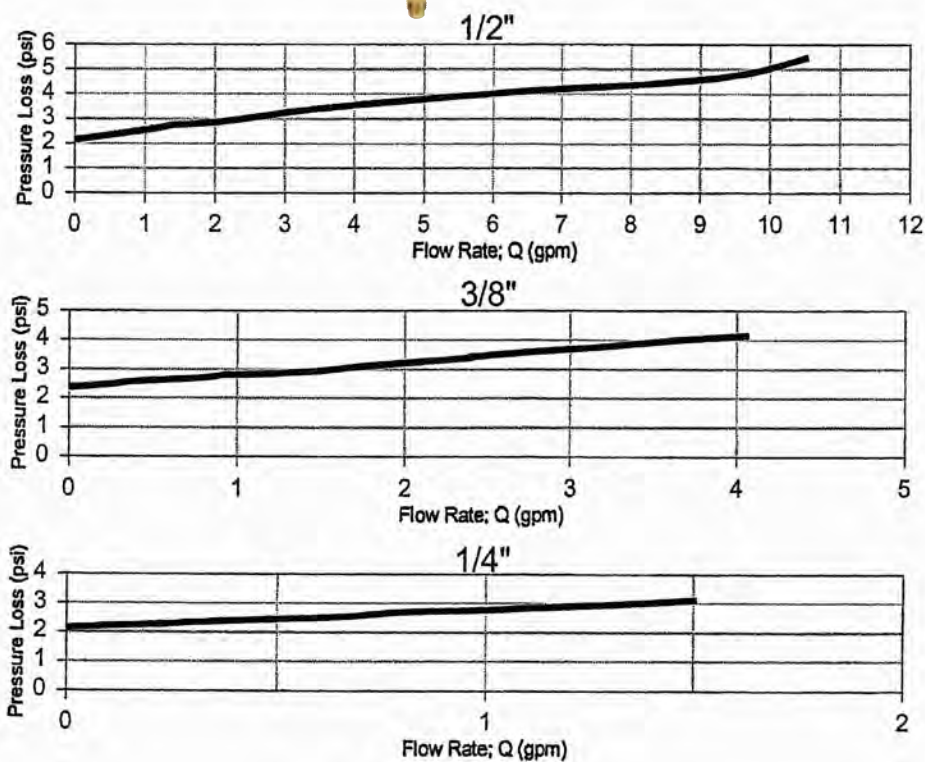
AVB1LF



### SPILL RESISTANT VACUUM BREAKERS

SVB 4W

SVB 4WLF



● Meter Rated Flow



For additional information, submittal sheets and manuals, visit [www.apollovalves.com](http://www.apollovalves.com)

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# BACKFLOW PREVENTION CATALOG

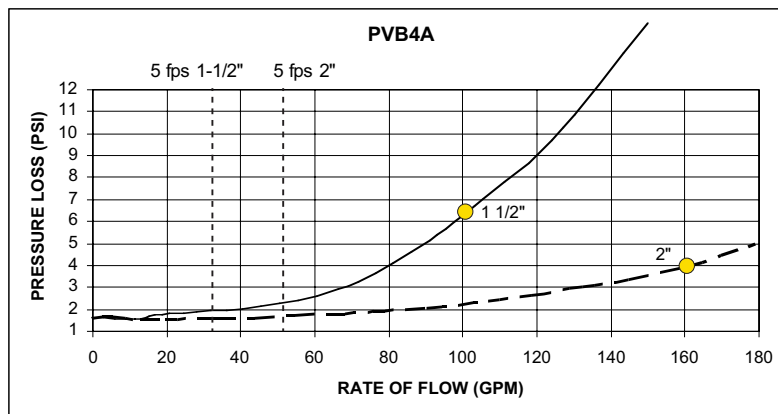
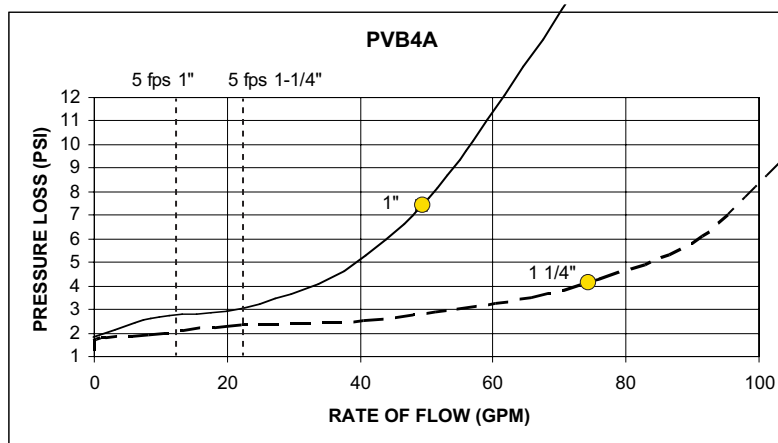
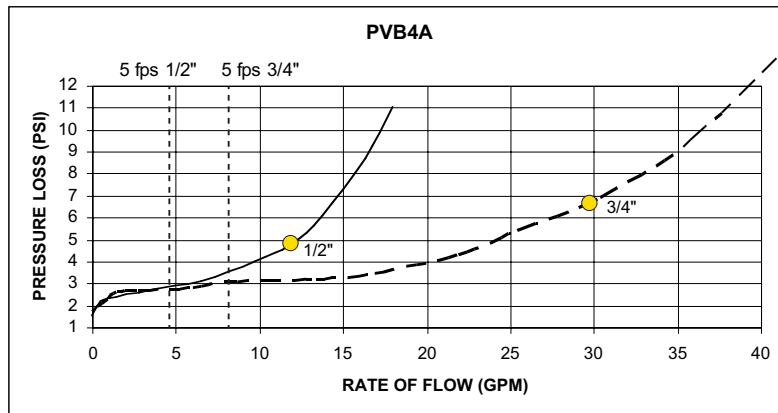
## Flow Curves

### ATMOSPHERIC TYPE VACUUM BREAKERS

PVB 4A  
PVB 4ALF



Note: 5 feet per second is the normal flow rate for irrigation systems (where majority of PVBs are used)



● Meter Rated Flow

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# BACKFLOW PREVENTION CATALOG

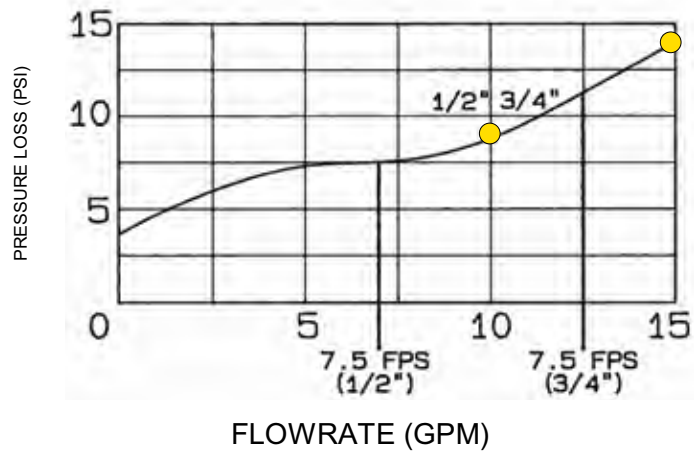


## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

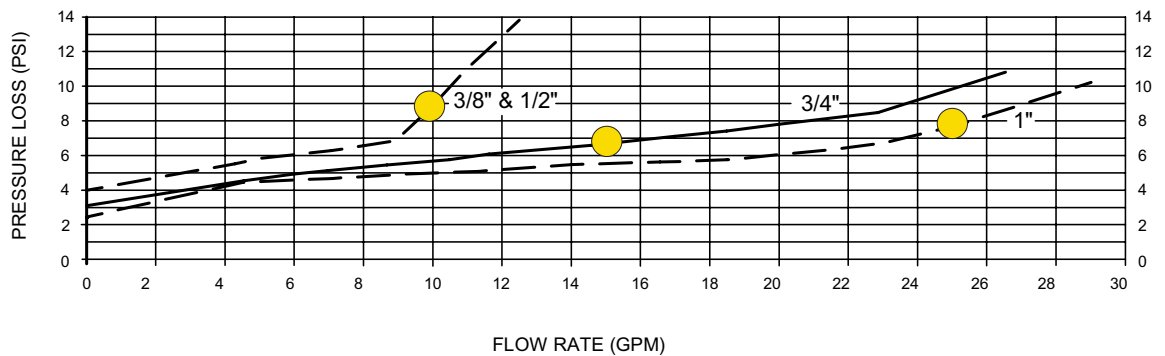
### DUAL CHECK W/ ATMOSPHERIC PORT

DCAP  
DCAP LF



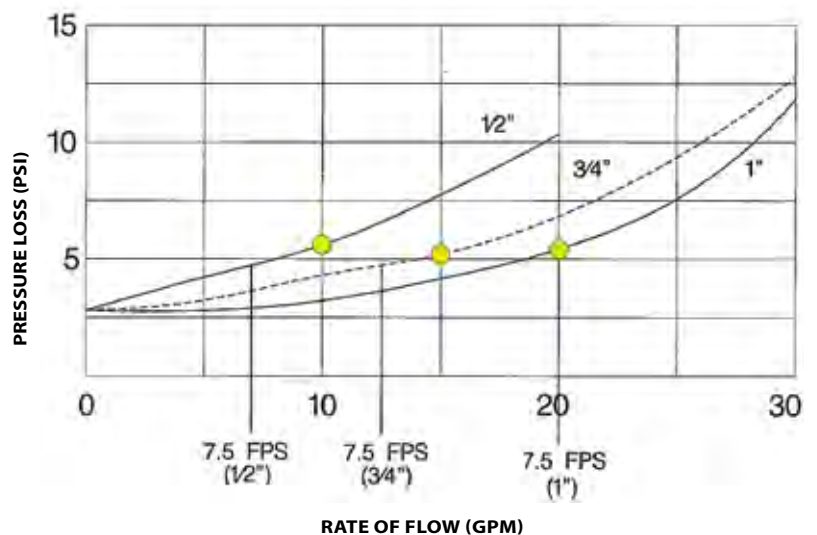
### DUAL CHECK VALVE

DuC 4N  
DuCLF 4N



### DUAL CHECK VALVE

DUC 40  
DUCLF 40



● Meter Rated Flow



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# BACKFLOW PREVENTION CATALOG

## Flow Curves

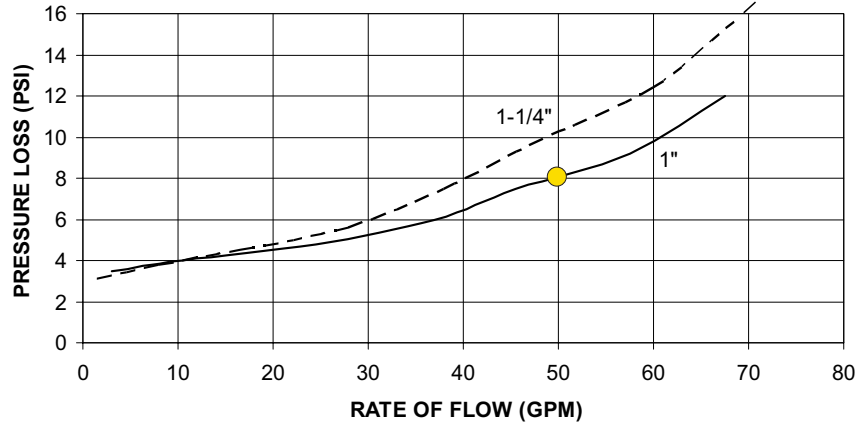
**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes on page 71)

### DUAL CHECK

#### DUC 4FP

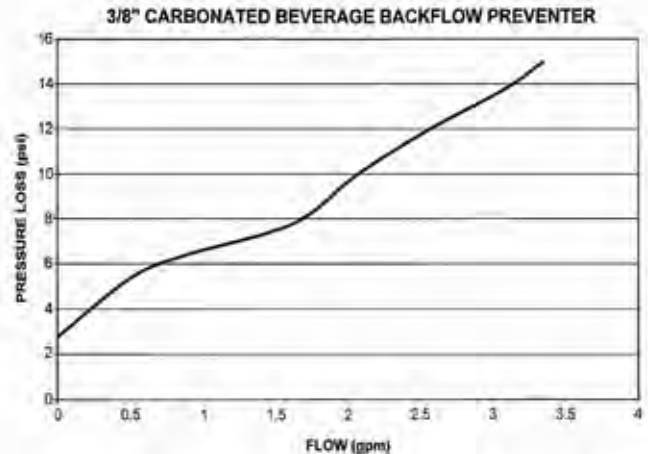
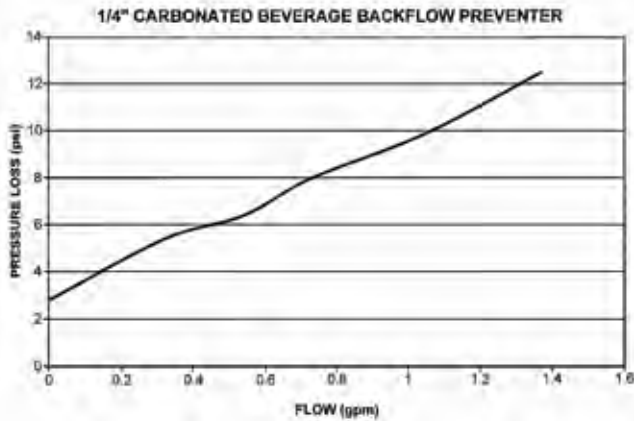


DUC-4FP



### CARBONATED BEVERAGE

#### CBBP



● Meter Rated Flow

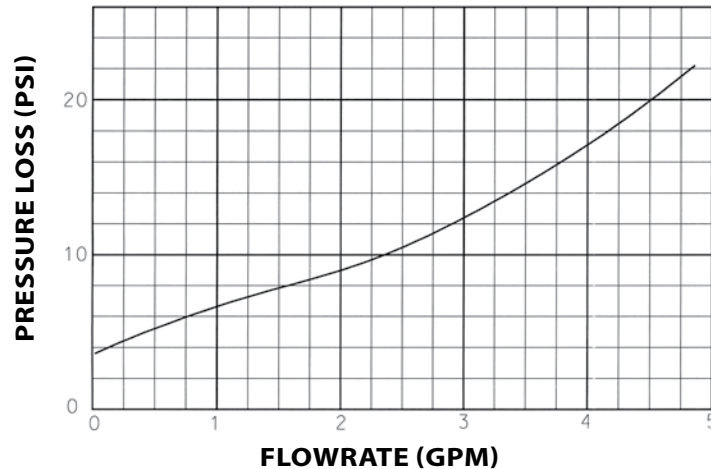
# BACKFLOW PREVENTION CATALOG

## Flow Curves

**Flow Curves:** Pressure loss versus flow data as determined by independent approval agencies. (See Notes below)

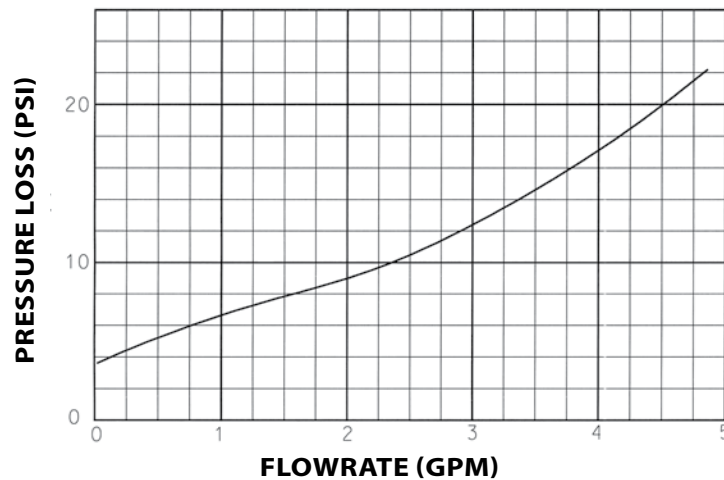
### HOSE CONNECTION DUAL CHECK

#### HBDUC



### LAB FAUCET DUAL CHECK

#### LFDUC



#### PRESSURE LOSS CURVE NOTES:

1. Flow curves directly reflect data collected by USC FCCHR or an ASSE approved laboratory.
2. Flow curves shown were recorded with butterfly shut-off valves. Flow curves with gate valves are slightly lower. Contact factory for more information.
3. All data points are based on increasing flow data, from zero GPM to rated flow (opening curve)
4. For higher flow rates/pressure loss information - contact factory.

● Meter Rated Flow



For additional information, submittal sheets and manuals, visit [www.apollovalves.com](http://www.apollovalves.com)

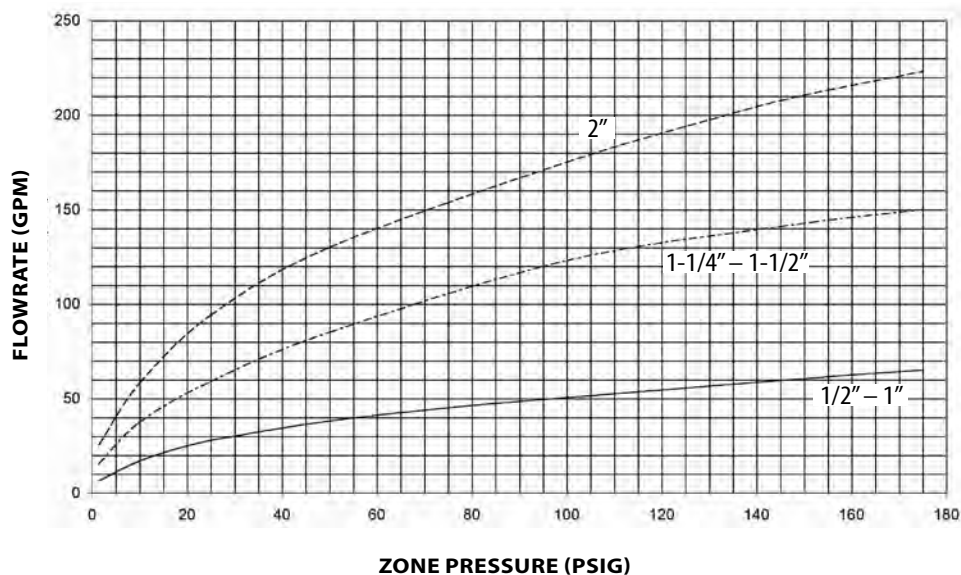
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# BACKFLOW PREVENTION CATALOG

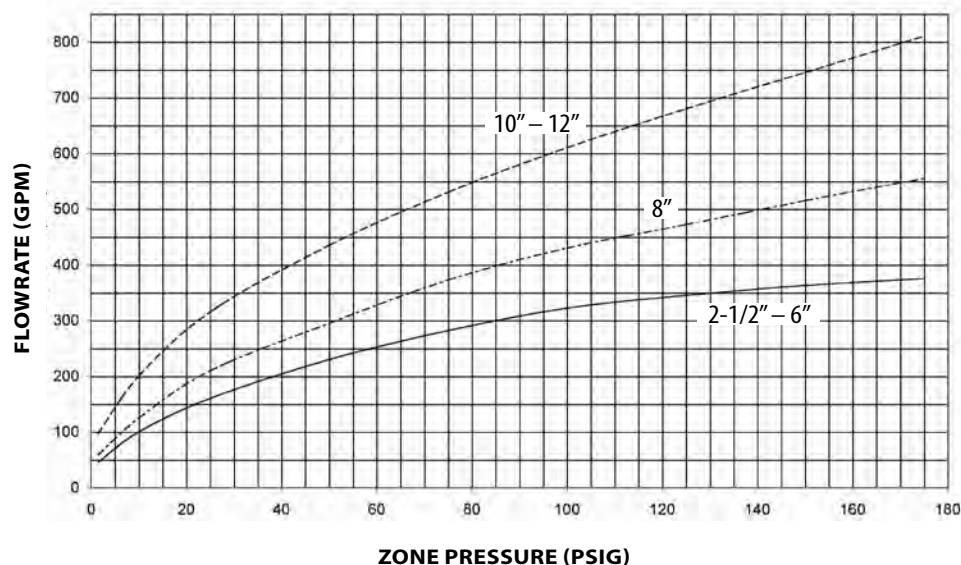
## Relief Valve Discharge Rates



### RV DISCHARGE RATES RP4A 1/2" TO 2"



### RV DISCHARGE RATES RP4A 2-1/2" TO 12"





# BACKFLOW PREVENTION CATALOG



## APPROVALS\*\*

| TYPE OF DEVICE                     | MODEL        | FACTORY CODE | SIZE        | APPROVALS   |      |         |       |                  |           |     |
|------------------------------------|--------------|--------------|-------------|-------------|------|---------|-------|------------------|-----------|-----|
|                                    |              |              |             | USC         | ASSE | CSA     | IAPMO | AWWA             | UL/cUL*   | FM* |
| Double Check                       | DC 4A        | 4A 100       | 1/2"-2"     | Yes         | 1015 | B64.5   | Yes   | Yes              | 3/4" - 2" | N/A |
|                                    | DC 4ALF      | 4ALF 100     | 1/2" - 2"   | Yes         | 1015 | B64.5   | Yes   | Yes              | 3/4" - 2" | N/A |
|                                    | DC 4ALF      | 4ALF 100     | 2-1/2"-12"  | 2-1/2" - 6" | 1015 | B64.5   | Yes   | 2-1/2" - 6"      | Yes       | Yes |
|                                    | DC 4ANLF     | 4ANLF 100    | 2-1/2"-12"  |             | 1015 | B64.5   | Yes   | Pending          | Yes       | Yes |
|                                    | DC 4S        | 4S 100       | 10"         | Yes         | 1015 | B64.5   | Yes   | C-510            | Yes       | Yes |
|                                    | DC 4SG, LF   | 4SG 100, LF  | 2-1/2"-8"   | Yes         | 1015 | B64.5   | Yes   | C-510            | Yes       | Yes |
| Reduced Pressure                   | RP 4A        | 4A 200       | 1/2" - 2"   | 1/2"-1", 2" | 1013 | B64.4   | Yes   | Yes              | 3/4" - 2" | N/A |
|                                    | RP 4ALF      | 4ALF 200     | 1/2" - 2"   | 1/2"-1", 2" | 1013 | B64.4   | Yes   | Yes              | 3/4" - 2" | N/A |
|                                    | RP 4ALF      | 4ALF 200     | 2-1/2"-12"  | 4" - 6"     | 1013 | B64.4   | Yes   | 4" - 6"          | Yes       | Yes |
|                                    | RP 4ANLF     | 4ANLF 200    | 2-1/2"-12"  |             | 1013 | B64.4   | Yes   | Pending          | Yes       | Yes |
|                                    | RP 40S       | 40 200 T2S   | 1/4"-1"     | Yes         | 1013 | B64.4   | Yes   | N/A              | 3/4"-1"   | N/A |
| Dual Check                         | DUC 40       | 40 300       | 1/2"-1"     | N/A         | 1024 | B64.6   | N/A   | N/A              | N/A       | N/A |
|                                    | DUC 4N       | 4N 300       | 3/8"-1"     | N/A         | 1024 | B64.6   | N/A   | N/A              | N/A       | N/A |
| Dual Check Atmospheric Port        | DCAP         | 40 400       | 1/2"-3/4"   | N/A         | 1012 | B64.3   | N/A   | N/A              | N/A       | N/A |
| Dual Check Fire Protection         | DUC 4FP      | 4FP 300      | 1" - 1-1/4" | N/A         | 1024 | B64.6   | N/A   | N/A              | Yes       | N/A |
| Pressure Vacuum Breaker            | PVB 4A       | 4A 500       | 1/2"-2"     | Yes         | 1020 | B64.1.2 | Yes   | N/A              | N/A       | N/A |
| Spill-Resistant SVB                | SVB          | 4W 500       | 1/4"-1/2"   | Yes         | 1056 | B64.1.2 | Yes   | N/A              | N/A       | N/A |
| Double Check Detector Assembly     | DCDA 4ALF    | 4ALF 600     | 2-1/2"-12"  | 2-1/2" - 6" | 1048 | B64.5   | N/A   | N/A <sup>#</sup> | Yes       | Yes |
|                                    | DCDA 4ANLF   | 4ANLF 600    | 2-1/2"-12"  |             | 1048 | B64.5   | N/A   | N/A <sup>#</sup> | Yes       | Yes |
|                                    | DCDA 4SG, LF | 4SG 600, LF  | 2-1/2"-8"   | Yes         | 1048 | B64.5   | N/A   | N/A <sup>#</sup> | Yes       | Yes |
|                                    | DCDA 4S      | 4S 600       | 2-1/2"-10"  | Yes         | 1048 | N/A     | N/A   | N/A <sup>#</sup> | Yes       | Yes |
| Reduced Pressure Detector Assembly | RPDA 4ALF    | 4ALF 700     | 2-1/2"-12"  | 4" - 6"     | 1047 | B64.4   | N/A   | N/A <sup>#</sup> | Yes       | Yes |
|                                    | RPDA 4ANLF   | 4ANLF 700    | 2-1/2"-12"  |             | 1047 | B64.4   | N/A   | N/A <sup>#</sup> | Yes       | Yes |
| Atmospheric Vacuum Breaker         | AVB1         | 38 100       | 1/4"-2"     | N/A         | 1001 | B64.1.1 | Yes   | N/A              | N/A       | N/A |
|                                    | AVB2         | 38 200       | 1/4"-3/4"   | N/A         | 1001 | B64.1.1 | Yes   | N/A              | N/A       | N/A |
| Carbonated Beverage Back. Prev     | CBBP         | 4C 100       | 1/4"-3/8"   | N/A         | 1022 | B64.3.1 | Yes   | N/A              | N/A       | N/A |
| Hose Conn. Vacuum Breaker          | HVB          | 38 304       | 3/4"        | N/A         | 1011 | B64.2   | Yes   | N/A              | N/A       | N/A |
| Hose Conn. Backflow Dual Check     | HBDUC        | 38 304 02    | 3/4"        | N/A         | 1052 | B64.2   | N/A   | N/A              | N/A       | N/A |
| Anti-Freeze Hose Con. V.B          | HBVB         | 38 404       | 3/4"        | N/A         | 1011 | B64.2   | Yes   | N/A              | N/A       | N/A |
| Lab Faucet Dual Check              | LFDUC        | 38 500       | 1/4"-3/8"   | N/A         | 1035 | B64.7   | Yes   | N/A              | N/A       | N/A |

Nov. 6, 2013

- Approved for horizontal and vertical installation
- \* Must have indicating type shut-off valves
- \*\* Consult with factory for current approval details
- # Detector assemblies are not addressed by AWWA.

Note: For specific USC approved devices, please see the "FCCCHR" official listing. 4S-100 Series is listed as Model DC and 4S-600 is listed as Model DCDA on USC list.



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REV. 11/6/13

# BACKFLOW PREVENTION CATALOG

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All Products Catalog



Automatic Control Valve Catalog



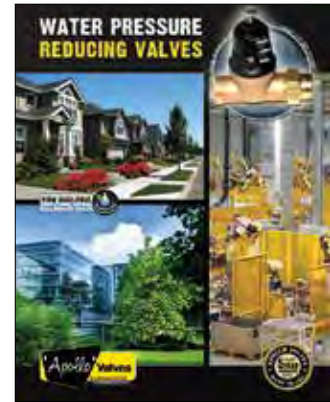
Commercial Products Catalog



Fire Protection Products Catalog



Hydronic & Steam Heating Products Catalog



Water Pressure Reducing Valves Catalog



XPress Fire Installation Guide



Y-Strainer Catalog

# BACKFLOW PREVENTION CATALOG



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Conbraco Industries, Inc. warrants, to its initial purchaser only, that its products which are delivered to this initial purchaser will be of the kind described in the order or price list and will be free of defects in workmanship or material for a period of FIVE years from the date of delivery to you, our initial purchaser. This warranty applies to Apollo brand product with "Made in the USA" markings only.

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\* It is the end user's responsibility to confirm that items intended for use satisfy local codes and standards.



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|                 | Spirit Group                        | FL (except Panhandle)                                   | info@spiritgroupinc.com           | 407-291-6035 | 407-299-0378 |
|                 | Tim Morales & Associates, Inc.      | AL/LA/FL Panhandle                                      | sales@timmorales.com              | 251-602-8333 | 251-602-8339 |
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|                 | V.E. Sales Co., Inc.                | MI (Except Upper Peninsula)                             | tomv@vesalesinc.com               | 586-774-7760 | 586-774-1490 |
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|                 | New Tech Marketing                  | Northern-IL/WI-East/IN/MI-UP/IA-River Counties          | sales@new-techmarketing.com       | 630-378-4300 | 630-378-0343 |
|                 | New Tech Marketing                  | MO/Southern IL/Northeast Kansas                         | ntm112@aol.com                    | 618-394-0329 | 618-394-0427 |
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|                 | HC Fletcher                         | CA - North  | apollosales@hcfletcher.com        | 800-432-7047 | 949-660-9072 |
|                 | Marshall-Rodeno Associated          | ID-SE, NV-NE, UT, CO, MT, NM                            | dnaylor@marshallrodeno.com        | 303-575-6701 | 303-575-6706 |
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|                 | J. Levandier Sales, Inc.            | NS, NB, PE & NL   | vickie@jlevandiersales.com        | 506-858-1615 | 506-858-1084 |
|                 | Kern Industries, Ltd.               | Alberta-North   | colin@kernind.com                 | 780-451-2056 | 780-454-6687 |
|                 | Kern Industries Calgary, Ltd.       | Alberta-South   | laura.wood@kernindustries.ca      | 403-730-7791 | 403-239-8179 |
|                 | Key to the North Sales Agency, Inc. | Ontario-North   | office@keytothenorth.net          | 705-867-1401 | 705-867-1606 |
|                 | Task Controls, Inc.                 | Ontario   | infotoronto@taskcontrols.com      | 416-291-3004 | 416-754-3481 |
|                 | Tom Beggs Agencies Ltd.             | Manitoba/NW Ontario                                     | tba@mts.net                       | 204-953-1900 | 204-774-6915 |
|                 | Ventes Techniques Nimatec, Inc.     | Quebec  | nimatec@nimatec.com               | 450-691-9427 | 450-691-4949 |
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|                 | John Hart                           | FL  | jhart@lascofittings.com           | 772-595-7773 |              |
|                 | Larry Perkins                       | TX - Southern   | lperkins@lascofittings.com        | 936-443-1096 |              |
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